



Land Specialists

GREENHILL PARK RESIDENTIAL SUBDIVISION

STAGE 16

INFRASTRUCTURE DEVELOPMENT COMPLETION REPORT

CARRS ROAD, GREENHILL PARK

CHEDWORTH PROPERTIES LTD

Our reference: 19-30410-01

Prepared for Chedworth Properties Limited

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REVISION	Issued for Application	DATE	18 March 2022
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1.0 BACKGROUND

1.1 Introduction

This application relates to Greenhill Park Subdivision Stage 16 located south of Carrs Road linking to Watkins St.

Works included the following:

- Stage 16 subdivision roading (including Chilman Terrace, Musselwhite Terrace, Earp Crescent & Cogar Terrace)
- Wastewater reticulation and lot connections
- Stormwater reticulation for roading and lot connections
- Watermain and lot connections
- Associated Streetlights
- Electrical reticulation for subdivision lots and street lighting
- Ultrafast Broadband reticulation
- Gas supply for subdivision development
- Concrete footpath construction
- Landscape planting

On the south side of Carrs Road Stage 16 development works for 31 residential lots plus 25 multi lots have been carried out under Hamilton City Council Subdivision Resource Consent 011.2018.6632, granted 05 September 2018 and 011.2019.7140.003 granted 12 November 2021.

This application is made on behalf of Chedworth Properties Ltd for Works Clearance from Hamilton City Council. Works clearance is sought in order to obtain certification pursuant to Section 224(c) of the Resource Management Act 1991 for Greenhill Park subdivision, Stage 16, LT 570351. A copy of the land transfer plan is included in Appendix 8.

This report addresses the key details associated with the Infrastructure provided.

1.2 Entities Involved with Development

The following companies have been involved with the construction of the Subdivision;

- Developer: Chedworth Properties Ltd
- Consultant Design Engineers: Beca Consultants
- Consultant Engineers and Surveyors: S&L
- Geotech Engineer Core50 Engineers
- Landscape Design Boffa Miskell
- Landscape Planting Native Awa
- Head Contractor: Online Contractors 2016 Ltd (OLC)
- Subcontractors & Suppliers:

Civil Materials Supply	Hynds
Stormwater and Wastewater Drainage	West Construction Ltd (WC)
Geotechnical Testing	Opus/WSP
Concrete Supply	Bowers Bros Concrete
Concrete kerbs	Waikato Construction
Carparks	Purrfect Paving
Footpaths	Purrfect Paving
Concrete Cutting	Ironman Concrete Cutting
Streetlights	Ibex Lighting
Power Reticulation	WEL Networks – (Subcontractors: Northpower and Bayonne)
Road Materials Supplier	Stevenson Resources, Gleeson Quarry – Huntly
Road Surfacing Contractor	Higgins Contractors
Road Signs	Directionz Ltd
Road Line Marking	Linemark
Gas	First Gas
Telecommunication	Ultrafast Fibre – (Subcontractor: Civtec)

1.3 Observation of Works

S&L undertook regular inspections of the works as the project progressed and reviewed the contractor’s quality assurance measures including test results. The progress of the construction was reviewed formally at weekly site meetings as well as discussions on site with the contractor.

The observation and supervision activities by S&L were undertaken to a level of CM3 (weekly site visits) as described in the IPENZ document “Guidelines on the Briefing and Engagement of Consulting Engineering Services” with additional inspections when required by the nature of the works under construction. S&L were able to maintain the level of observation during Covid level 3 lock down as S&L have a staff member who resides in Hamilton.

1.4 As-Built Data

A full set of as-built drawings and excel spreadsheets have been appended to this document in Appendix 9 and 10. These include the as built and asset value information required in accordance with the RITS. The as built data has also been included in this application in electronic format and a copy enclosed in final works clearance report for reference.

1.5 CCTV

CCTV inspections have been completed for the wastewater and stormwater lines. The footage has been provided to Hamilton City Council separately.

1.6 Design and Hamilton City Council Development Unit Design Acceptance

The following Approvals have been gained from the HCC Development Unit:

- Greenhill Park Stage 16 was designed by S&L Consultants and approved by HCC Development Unit.
- Greenhill Park Stage 16 Streetlighting was designed by Ibex Lighting and approved by HCC Development Unit.

1.7 Amendments to approved plans

Amendments from the approved plans have been made during construction as follows:

- Pavement type: Collector Road changed from one 200mm thick layer of GAP65 to WHAP65. Report submitted and confirmed by email from HCC Development Engineer included in Appendix 2(b).

2.0 EARTHWORKS

Earthworks have been carried out onsite under the supervision of S&L and Core50 Engineers. Core50 Engineers were engaged as the geotechnical engineer. The Core50 report of stage 16 subdivision earthworks and recommendations for building development is included in Appendix 1, detailing earthworks compliance with HCC RITS and NZ Standards.

3.0 ROADING INFRASTRUCTURE

3.1 Road Construction

Roads have been constructed in general accordance with the pavement shown on the approved engineering plans, except where the pavement has been changed as discussed in section 1.7 above.

Review of the road construction is as follows:

3.2 Subgrade

The underlying natural soils comprise sandy silts of varying strengths. Significant subgrade improvement works have been carried out as follows:

- Much of the Stage 16 subgrade consists of imported hardfill for the backfill of the stormwater and sanitary sewer underground lines beneath.
- All areas in the road carriageway that have not been backfilled with hard brown rock have been undercut to a minimum depth of 0.5m below subgrade level and replaced with a subgrade improvement layer of compacted hard brown rock.
- Subsoil drains have been laid beneath kerbs discharging into catchpits

Testing of the subgrade improvement layer included proof rolling with no visible weave, stringing by way of GPS survey, and Clegg hammer testing to confirm that a CIV > 15 (CBR > 15) had been achieved for all roads in Stage 16. Results of the Clegg hammer testing are included in Appendix 2(a).

A GPS survey was undertaken throughout Stage 16 and checked against the design surface. Results are included in Appendix 2(a), confirming that design pavements depths have generally been achieved to ITS tolerances.

All road subgrades have been tested using clegg hammers, showing that CBR values over 15 have been consistently achieved on all roads. The results from the Subgrade Clegg Hammer testing are summarised below:

Subgrade Clegg Hammer Results Summary

Road 1 CH 20 - 100	Range CIV 20 - 37 Mean CIV 32	Min Inferred CBR 28*
Road 2A CH 10 - 50	Range CIV 21 - 42 Mean CIV 33	Min Inferred CBR 31*
Road 2 CH 10 - 160	Range CIV 19 - 53 Mean CIV 27	Min Inferred CBR 25*
Road 3 CH 10 - 360	Range CIV 20 - 46 Mean CIV 29	Min Inferred CBR 28*
Road 4 CH 160 - 270	Range CIV 20 - 57 Mean CIV 31	Min Inferred CBR 28*
Watkins St extension CH 40 - 70	Range CIV 25 - 35 Mean CIV 29	Min Inferred CBR 44*

*Note: CBR = $0.07(\text{CIV})^2$ formula applied in accordance with RITS

3.3 Subbase

Subdivision roading comprises of the following subbase types:

Road 1 CH 20 - 100	200mm WHAP 65 subbase – Stevensons Tauhei
Road 2, 2A, 3, 4 & Watkins St Extension	No subbase aggregate on minor local streets

QA Supplied for the subbase included in Appendix 2(b) includes the following:

- Material testing sheets
- Stringing or survey in lieu of stringing
- Compaction testing of subbase aggregate with Nuclear Densometer

- Clegg Hammer Tests

3.4 Basecourse

Subdivision roading comprises of the following basecourse types:

Road 1	150mm TNZ M/4 AP40 basecourse – Stevensons Tauhei
Road 2, 2A, 3, 4 & Watkins St Extension	200mm TNZ M/4 AP40 basecourse – Stevensons Tauhei

QA Supplied for the basecourse included in Appendix 2(b) includes the following:

- Material testing sheets
- Stringing
- Compaction testing of the basecourse with Nuclear Densometer
- Clegg Hammer tests
- Benkelman Beam testing

Stringing

Stringing of the basecourse was carried out from kerbs prior to sealing. Results are included in Appendix 2(b) confirming that design pavements depths have generally been achieved to ITS tolerances.

Clegg Hammer

Clegg hammer testing has been undertaken on the subdivision roading basecourse showing compliance with RITS.

Nuclear Densometer

Nuclear densometer testing was carried out by Opus in order to confirm density.

Nuclear Densometer testing has been undertaken in accordance with RITS Section 3.8.2.5 & 3.8.3.4, Table 3-22. Results are included in Appendix 2(b).

The Target MDD for the TNZ M/4 AP40 pavement is 2.75t/m³ as per Opus MDD report (project number: 2-68015.00, lab reference: HA 7753_VHMDD).

Results are summarised below:

Basecourse NDM Results Summary

Road 1 CH 20 - 100	Min 95% of MDD (Target MDD 2.30t/m ³)	Mean 99% of MDD
Road 2A CH 10 - 50	Min 95% of MDD (Target MDD 2.30t/m ³)	Mean 98% of MDD
Road 2 CH 10 - 160	Min 96% of MDD (Target MDD 2.30t/m ³)	Mean 98% of MDD
Road 3 CH 10 - 360	Min 96% of MDD (Target MDD 2.30t/m ³)	Mean 98% of MDD
Road 4 CH 160 - 270	Min 95% of MDD (Target MDD 2.30t/m ³)	Mean 97% of MDD
Watkins St extension CH 30 - 70	Min 95% of MDD (Target MDD 2.30t/m ³)	Mean 99% of MDD

3.5 Benkelman Beam Results

Benkelman beam tests were carried out by Opus on the basecourse surface following surfacing. Results are summarised below:

Basecourse Benkelman Beam Results Summary

	Deflection (mm)			
	Maximum (mm)	Minimum (mm)	%age over 1.8mm (A2)	Average (mm)
Road 1 CH 20 - 100	1.08	0.74	0	0.88
Road 2A CH 10 - 50	0.80	0.56	0	0.65
Road 2 CH 10 - 160	0.84	0.36	0	0.59
Road 3 CH 10 - 360	1.10	0.22	0	0.50
Road 4 CH 160 - 270	1.36	0.42	0	0.72
Watkins St extension CH 30 - 70	1.06	0.48	0	0.72

Results conform to the maximum and average deflection requirements of Section 3.8.3.5, Table 3-23 of the RITS for A2 (up to 10⁵ EDA) roads.

3.6 Road Surfacing

A summary of road surfacing details laid by Higgins is listed below:

Road Surfacing Summary

Road 1	Membrane Seal	Surface
Collector Road	Grade four single coat first coat seal Residual Application Rate: 1.0L/m ²	40mm DG10
Local Roads 2, 2a, 3, 4 & Watkins St	Grade four single coat first coat seal Residual Application Rate: 1.0L/m ²	30mm DG7

4.0 WATER INFRASTRUCTURE

4.1 Installation

The water supply reticulation completed by Online Contractors includes the following components:

- 150mm mPVC PN12RRJ principal main
- 63mm PE80 PN12.5 ridermain
- Associated fittings, valves and hydrants
- Residential connections to all lots

Quantities and installation locations are shown on as-built records appended to this document.

4.2 Testing and Disinfection

Online Contractors Ltd carried out all aspects of pressure testing of the supply lines and disinfection prior to livening, in accordance with the ITS and in the presence of HCC.

Testing included the following items:

- Water supply pressure test result
- Water Supply disinfection
- Water Supply E Coli test

The pressure test and the observation of FAC (Free Available Chlorine) was witnessed by HCC's testing officer. The E Coli test samples were collected as part of the testing and the samples have been reviewed by HCC Officer, L. Parkes and passed.

Pressure testing results, pipe laying checklists and Bacto Test results are included in Appendix 3.

5.0 WASTEWATER INFRASTRUCTURE

Supporting quality assurance documentation for Wastewater Infrastructure supplied by the contractor and reviewed by S&L is attached in Appendix 4.

The gravity sewerage system comprises installation of the following components:

- 225mm dia uPVC SN16 waste water main
- 150mm dia uPVC SN16 wastewater main
- 100mm dia uPVC SN16 sewer laterals and lot connections
- Associated manholes.

Testing and inspection includes the following:

- CCTV inspection which has been supplied separately to Council
- Inspection of Manhole Structures
- Pressure testing of Manhole Structures by West Construction observed by HCC
- Pressure testing of 225 dia and 150mm dia wastewater mains by West Construction observed by HCC
- As-builting by West Construction and S&L with final as-builts compiled by S&L.

6.0 STORMWATER INFRASTRUCTURE

6.1 Installation

In accordance with the approved design, stormwater from Stage 16 discharges into the Area K swales for treatment and conveyance:

- Swales 2A & 2B are located on the south side of Carrs Rd and flow north.

The primary system comprises of:

- UPVC & RCRRJ stormwater mains and headwalls
- UPVC laterals and lot connections
- Road catchpits and leads
- Manholes

Observation of the works was undertaken by S&L and includes:

- CCTV inspection which has been supplied separately to Council
- Inspection of all manhole structures, catch pits, outlets and inlets

- As-built by Online Contractors and S&L Consultants with final as-builts compiled by S&L.

QA and checklists provided by the contractor and reviewed by S&L are included in Appendix 5.

6.2 Secondary flow paths

In accordance with the approved design, the stormwater from Stage 16 discharges into swales 2A & 2B for treatment and conveyance.

A piped drainage network has been designed to collect runoff from the road and lots with standard sumps. The pipes are designed to convey (without significant surcharge) the 50% AEP flows to the network of swales downstream. Each individual lot is provided with a piped connection to the main drainage system, in case on-lot soakage is not appropriate.

In events larger than a 50% AEP, secondary stormwater flows for Stage 16 will flow down the road shoulders to a low point within Road 3 and flow east across the road berm to spill into Swale 2A that butts the southern side of Carrs Road near the Athier Ave roundabout.

See attached as-built drawings 30410-01-S16-R1 and 30410-01-S16-SW1 in appendix 9 showing the location and direction of stormwater overland flow.

7.0 STREET LIGHTING, STREET MARKING AND SIGNAGE

Streetlights have been designed, supplied and installed by Ibex Lighting Ltd. All quality assurance documentation for the street lights is included in Appendix 7.

Signage has been installed by OLC subcontractor Directionz Ltd in accordance with approved drawings and RITS requirements.

Carriageway paint marking has been completed by OLC subcontractor Linemark Ltd and is in accordance with approved drawings and RITS requirements.

8.0 LANDSCAPING

8.1 Hard Landscaping

There are no hard landscaping works included in stage 16.

8.2 Soft Landscaping

The landscape planting within the road reserves and the stormwater swales has been completed. An inspection by HCC Parks and Open Spaces has been completed.

9.0 NETWORK UTILITIES

Network utilities have been provided as follows.

9.1 Power

Electrical reticulation has been installed by WEL Networks for both street lighting and residential supply.

A WEL Networks works clearance statement is attached in Appendix 7.

9.2 Gas

First Gas has installed reticulation to enable future connection by individual lot owners. A completion Certificate is included in Appendix 7.

9.3 Telecommunications

Ultrafast Fibre has installed reticulation to individual lots. An acceptance letter is included in Appendix 7.

10.0 FINAL INSPECTION

A final inspection has been undertaken and was attended by Hamilton City Council's Development Engineers and associated staff from S&L, Online Contractors and Ibex Lighting.

A separate inspection by Parks and Open Spaces has also been completed.

APPENDIX 1

Earthworks QA Documentation

- Core50 Engineers Report on Subdivision Earthworks & Recommendations for Building Development



GREENHILL PARK RESIDENTIAL SUBDIVISION

Stage 16

Area LUK, Greenhill Park, Hamilton

GEOTECHNICAL COMPLETION REPORT ON SUBDIVISION EARTHWORKS AND RECOMMENDATIONS FOR BUILDING DEVELOPMENT



Our Ref: CR171738-AREA-LUK-S16-01 v2 (FFL plan updated)

Prepared for: Chedworth Properties Limited

Date: March 2022

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Appendices

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Appendix B	<u>Geotechnical Completion Forms</u> Checklist 2.2 - Statement of Professional Opinion Summary of Geotechnical Data for Individual Lots
Appendix C	<u>Laboratory Testing</u> Summary Plan Fill Material Lab Testing
Appendix D	<u>Post Construction Test Results</u> Soil Tests by CORE50 NDM Testing
Appendix E	<u>Stormwater Management</u> (Minimum Lot Levels)

1.0 Subdivision Development Earthworks

1.1 Introduction

Stage 16 of Greenhill Park is currently accessible from Webb Drive and Watkins Street. Stage 16 comprises 56 residential lots (numbered 450 to 480, 8001 to 8024 and 8117.). The locations of these lots are shown on attached subdivision plan 19-30410-16-RC1 included in Appendix A.

Bulk earthworks have been completed to re-contour the previously agricultural landscape for Stage 16 of the Greenhill Park Residential Subdivision in Hamilton. Works have been carried out in accordance with Hamilton City Council's (HCC) Subdivision Resource Consent: 0011.2019.7140.003. Prior to commencement of earthworks, geotechnical investigations were carried out by Beca Ltd (Beca) in 2016 [1] and summaries in DBCE Preliminary Geotechnical Report for L&K&Eldone (December 2019).

HCC's Infrastructure Technical Specifications (ITS) set out the minimum standards for design and construction of public infrastructure within Hamilton City. Section 2.1.5 of the *Earthworks and Geotechnical Requirements* of the ITS states that the developer shall appoint a geo-professional to carry out functions as described in NZS 4404[5] Section 2.2.4. ITS Section 2.3.3.1 states that a geotechnical completion report shall be submitted as per NZS 4404 Section 2.6 including a statement of professional opinion on the suitability of land for building construction [4]. The developer has appointed CORE50 Ltd as the geo-professional.

To satisfy the requirements of HCC's Resource Consent, the ITS and NZS 4404, this report summarizes the observations and testing undertaken during the development of the stage, discusses the suitability of the ground for the support of the proposed residential buildings and contains recommendations for the disposal of stormwater runoff generated on individual sites.

Included in Appendix A of this report is the proposed subdivision plan comprising the proposed new lots for Area LUK Stage 16. The included earthworks plan shows the cut/fill extent of the earthworks undertaken, test positions, and road and lot locations.

1.2 Earthworks in the Subdivision

The earthworks for stage 16 of the subdivision development were undertaken between October 2020 and February 2022.

These earthworks comprised:

1. The stripping of surface topsoil to expose underlying natural soils.
2. The placement of filling within majority of the stage.
3. Backfilling and raising the ground level with new fill to create uniform fill platforms.
4. The reinstatement of the surface topsoil cover and subsequent grassing.

The soils encountered during the formation of the site and road subgrades were a mixture of silty clay and clayey silt, typical of Walton group deposits in this area of Hamilton. These soils were those that had been identified in pre-construction site investigations by the Beca Report 2016. The published geology indicates that Area LUK soils comprise Hinuera Formation alluvium at surface with Walton Subgroup overlain by Hamilton Ash in the gently sloping hill within the LUK area.

The filling work was undertaken using these site soils gained from areas of cut within stage 16 and the larger Greenhill Subdivision. Filling was undertaken during summer seasons of 2020 to 2022, when drying back of the soils was possible to close to optimum moisture contents to achieve near maximum compaction densities.

Upon completion of the earthworks, approximately 100 to 300 mm of topsoil was placed across the sites and the finished surfaces were grassed in accordance with Conditions of the Resource Consent. Areas where an initial grass strike did not take place were re-grassed. While the target topsoil depths after the earthworks were to be around 300 mm, no guarantee is implied or given that the topsoil on any part of any lot is 300 mm or less and it is recommended that future owners or designers or builders check topsoil depths when preparing site development plans and cost schedules.

1.3 Earthworks Standards

The earthworks in filling were undertaken using in-situ Silty CLAY and clayey SILT mixtures gained from areas of cut within stage 16 and across the larger subdivision. The standards for the placement of filling, as stated in the earthworks contract documents, were to comply with NZS 4431:1989 “Code of Practice for Earth fill for Residential Development” and the Council ITS. Filling placed to these standards may be considered as good ground in terms of NZS 3604:2011 “Timber Framed Structures”.

The compaction of the filling placed was monitored and tested for compaction density using a hand-held shear vane and nuclear densometer in finer grained Clayey SILT and Silty CLAY. The compaction control criteria adopted for engineered fill on site were as follows:

- Air voids percentage average value less than 10 %.
- Air voids percentage maximum single value 12 %.
- Undrained shear strength average value not less than 140 kPa.
- Undrained shear strength minimum single value 100 kPa.
- Compaction percentage average value not less than 95%.
- Compaction percentage minimum single value 90%.

1.4 Filled Ground

During the placement of filling on the road subgrades and on areas intended for residential development, the contractor, OLC, stripped and removed all topsoil and other surface organic soils. Post construction testing was carried out to confirm the interface between the cut and fill. Filling was placed in discrete layers with compaction applied through sheepfoot drum rollers.

As most of the filling placed comprised clayey SILT and Silty CLAY identified in the pre subdivision boreholes, testing of the compaction achieved was mostly undertaken with a handheld shear vane and NDM testing (Nuclear Density Meter).

The results indicate that the construction filling standards have been met. However due to the expansive nature of the fill material, shallow or waffle foundations on all stage 16 lots must be designed to mitigate “M Class” expansive soils, i.e. NZS 3604:2011 foundations modified as per NZ Building Code B1/AS1 (28th November 2019) Section 7 or engineered waffle slabs constructed in compliance with AS2870-2011 Residential Slabs and Footings.

1.5 Areas of Cut

Areas partly developed in cut are shown on 19-30410-16-RC1 (Appendix A). Lots 472-477 had between 100mm–4500mm of cut material. In these areas, the ground at formation levels was observed to comprise the same Clayey SILT and Silty CLAY that had been used for filling elsewhere in stage 16 and as identified by pre subdivision tests.

1.6 Test Results in Filling Placed

A summary of the tests undertaken by CORE50 is present in Appendix D.

The shear vane and nuclear densometer test results show that acceptable soil strengths had been developed in all fill areas tested.

1.7 Test Results in Areas of Cut and Natural Ground

Lots 472 to 477 were predominately reshaped in cut only areas. The natural ground under the respread topsoil comprised of silty clay and clayey silts as had been identified in the pre-subdivision investigation boreholes.

The results of the tests undertaken indicate that “good ground” as defined in NZS3604:2011 is present. No areas that were tested will require any future ground improvement work for buildings supported.

1.8 Land Hazards

1.8.1 Land Stability

All lots across stage 16 have been graded as flat as possible with a desirable gradient of 0.5%. However, boundaries of various lots were battered to optimize use of fill material. Based on the competency of the inherent soils, building restriction zones of 3m from the top or any swale. Any lot bordering a stormwater swale has been identified as a TC2 zone for foundations. The foundation design for these lots will also need to allow for appropriate setback or alternative design options (i.e. underpinning) where adjacent to the swales.

Standard good practice around small slopes on the western and central sections of stage 16 will be required. Buildings should be set back from the slopes and avoid either surcharging the slopes or undermining the slopes. All foundations in this area are subject to specific design, and an assessment of the building location and earthworks should be carried out as a part of the engineering design/review of any section adjacent to a slope.

1.8.2 Flooding

The final lot levels have been set based on infrastructure requirements and freeboard from flood levels developed as part of the stormwater design for the larger subdivision. The means of disposal of stormwater runoff from lots in this stage of the subdivision are described in the catchment and overland flow assessments by Beca

(interpretive Report Lot Levels Area LUK). In the report for area LUK, a 1% AEP flood event is identified for each swale system. A list of minimum Lot Levels for Stage 16 is included in Appendix E.

Site grading during house construction must not lower finished levels below the minimum finished ground levels identified by S&L without further review of the impacts on flooding. Earthworks must not direct stormwater runoff to adjacent properties, or towards buildings, or create areas of localized ponding. All overland flow is to be towards the road frontage on each section, where falls will direct surface flow towards the swale system.

It is the responsibility of the building design professional to ensure that the requirements for mitigation for the hazard of flooding are met by the design prior to submitting to Council for consent. Confirmation of the swale construction and flood levels are excluded from the scope of this report and are to be covered separately with sign-off of infrastructure works.

1.8.3 Liquefaction

The potential for the hazard of liquefaction for Area LUK of the Greenhill Park Subdivision is discussed in the DBCE Preliminary Geotechnical Report. Foundations near the top of the swales are classed as TC2 like foundations. The liquefaction summary plan is appended to this Completion report. Specifically, the requirements are:

- 0m – 1.5m no habitable dwellings to be built within 1.5 m of the swale crest.
- Lots adjacent to swales to have TC2 foundation designs.

1.8.4 Expansive Soils

Underlying soils within stage 16 are typically either Hinuera Formation based deposits, or Walton Subgroup. The Hinuera Formation is predominantly sand, and silt based and considered non expansive or slightly expansive. The Walton Subgroup has a much higher clay content and is considered slightly to moderately expansive. Given the volcanic origins, the expansive nature of the soils is generally non-recoverable i.e., shrinkage only. However, the relatively high shrinkage potential of the Walton Subgroup means it would be normal to classify this as moderately expansive in its in-situ state i.e., 20-39mm. Majority of stage 16 consists of soil material from the Walton subgroup.

2.0 Disposal of Stormwater

Greenhill Park has been designed with a swale network to limit peak flows from the subdivision to 80 % of the 1 % AEP pre-development rate. S&L have provided the stormwater design for the current stage of the subdivision. As a part of this design, 100% of the onsite stormwater (up to the allowable impermeable area per lot) has been allowed for in the system design. As such, no at source on site stormwater measures are required as a part of the overall stormwater design. This allows for a centralized stormwater system with has been stated as preferred for long term maintenance by Council. The piped drainage network has been designed to convey the 10% AEP flows from roads and lots to the swale network, with each lot to be provided with a piped service connection. Flow volumes over this design event may run overland into the swale network as secondary flow.

We recommend that reduced onsite water efficiency measures such as catchpit filters and reuse tanks be encouraged to improve water efficiency and reduce the sediment load downstream. Such measures should be at the discretion of the end user on a case by case basis.

The above recommendations do not supersede any additional measures that Council may require of each individual lot. Any Council requirements in addition to the subdivision design should be followed. Any such requirements should be confirmed from Council for this area. Any lot coverage over the maximum permitted will require site specific stormwater management to offset the effects of added runoff volume.

3.0 Retaining Walls

There are no retaining walls that were constructed by the developer within stage 16.

4.0 Professional Opinion

It has been demonstrated in this Geotechnical Completion Report, that earthworks have been completed and building platforms have been constructed to comply with Council's ITS specifications and the New Zealand Building Code. Recommendations have been provided within the report for the disposal of stormwater from individual lots, for the ongoing development of the lots and for the mitigation of liquefaction risk where applicable.

In accordance with ITS Section 2.3.3.1, a statement of professional opinion is enclosed in Appendix II of this document. This statement is presented in the form of Checklist 2.2 of Council's Development Manual, Volume 4: Quality Systems for Land Development, and is accompanied by a *Summary of Geotechnical Data for Individual Lots* which summarizes the information and recommendations contained in this report.

5.0 Applicability

Recommendations contained in this document are based on data from observations of site earthworks, boreholes, and test results. Inferences about the nature and continuity of subsoils away from these locations are made but cannot be guaranteed.

In all circumstances, if variations in the subsoils occur which differ from those described or are assumed to exist, the site should be inspected by an engineer suitably qualified to make an informed judgement and provide advice on appropriate improvement measures.

This report has been prepared specifically for Stage 16 as shown for Lots: 450 to 480, 8001 to 8024 and 8117 of Area LUK Stage 16 within the Greenhill Park Residential Subdivision. No responsibility is accepted by CORE50 Ltd for the use of any part of this report for other development sites without their written approval.

Report Prepared By:

Date: 11th March 2022

.....

Aaron Kennedy

Civil Engineer

Report Reviewed By:

Date: 18th March 2022

.....

Michael Richardson

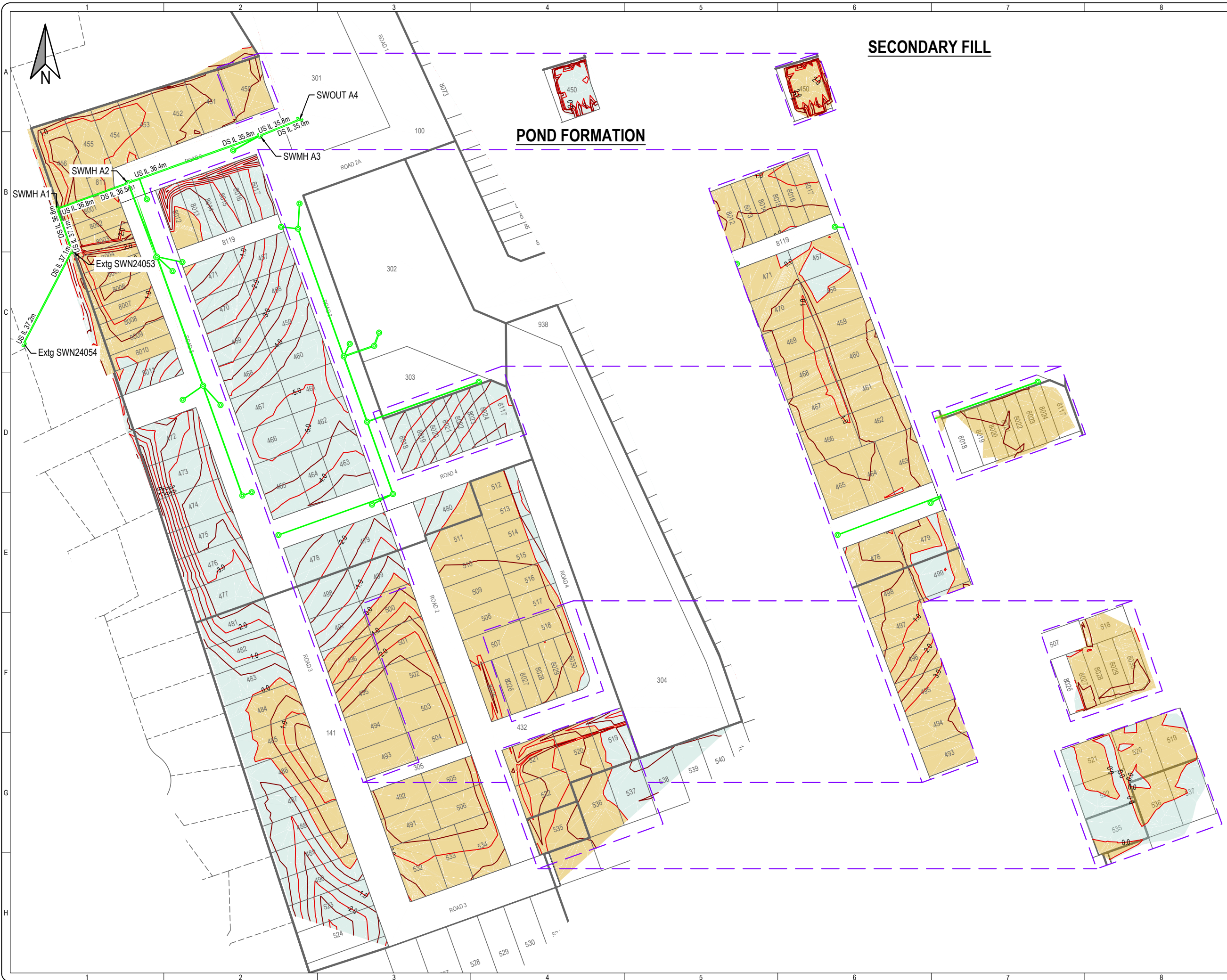
Geotechnical Engineer

References

- [1] Ruakura Land Development - LDP Geotechnical Factual Report by Beca, 15 April 2016.
- [2] C. Hughes and K. Read, "Ruakura Development - Stage 1 Geotechnical Investigation – Liquefaction Potential Detailed Assessment," Opus International Consultants, Ltd., Hamilton, New Zealand, 2014.
- [3] M. Hughes and L. Shuler, "Report on Preliminary Geotechnical Investigation, Ruakura Development, Hamilton," S&L Consultants, Ltd., Tauranga, New Zealand, 2015.
- [4] "Section 2 Earthworks and Geotechnical Requirements," in *Infrastructure Technical Specifications*, Hamilton, New Zealand, Hamilton City Council, 2013.
- [5] "NZS 4404 Land Development and Subdivision Infrastructure," in *New Zealand Standards*, Wellington, New Zealand, Standards New Zealand, 2010.
- [6] "Greenhill Park - Geotechnical Interpretation and Design-Area 1" by Beca 28 October 2016.
- [7] "Part 5: Earthquake Actions - New Zealand," in *NZS 1170.5:2004 Structural Design Actions*, Standards New Zealand, 2004.
- [8] "Greenhill Park Design Report - Area I (Stage 5, 6, 7 & 8) by Beca 20 December 2016
- [9] "Clause B1: Structure," in *Acceptable Solutions and Verification Methods For New Zealand Building Code*, Wellington, Ministry of Business, Innovation and Employment, 2014.
- [10] "Part A: Technical Guidance," in *Repairing and rebuilding houses affected by the Canterbury earthquakes*, Wellington, Ministry of Business, Innovation and Employment, 2012.
- [11] "Clause E1: Surface Water," in *Acceptable Solutions and Verification Methods For New Zealand Building Code*, Wellington, Ministry of Business, Innovation and Employment, 2014.
- [12] "Section 4 Stormwater," in *Infrastructure Technical Specifications*, Hamilton, New Zealand, Hamilton City Council, 2015.
- [13] "Preliminary Geotechnical Report for L&K&Eldone" by DBCE December 2019.

Appendix A Reference Drawings
Subdivision plan 19-30410-16-RC1
Cut/Fill Plan
Preliminary Subdivision Foundation Plan

R:\Project Files\30410-01-1901 Drawing Presentation Files\19-30410-01 - Stage 16 and 17 Cut Fill Plan.dwg - Plotted: 23/02/2022




SHRIMPTON & LIPINSKI
 LAND DEVELOPMENT &
 DESIGN SPECIALISTS
 Ph. 07 577 6069
 Email: info@sltga.co.nz
 P.O. Box 231, Tauranga 3140
 www.sltga.co.nz

LEGEND:

- CUT
- FILL
- MAJOR CONTOUR
- MINOR CONTOUR

CONTOURS SHOWN ARE AT 0.5m INTERVAL.

Rev	DESCRIPTION	DRN	CKD	APP	DATE
0	PRELIMINARY	NW	SRC	GC	08/21
1	AREAS ADDED	NW	GC	GC	02/22
2	GENERAL UPDATE	NW	SC	GC	02/22

NAME	DATE	NAME	DATE
SURVEYED		DESIGNED	

COORDINATE SYSTEM: NZGD 2000 - MOUNT EDEN
 ORIGIN OF COORDINATES:
 HEIGHT DATUM: MOTURIKI LVD 1953
 ORIGIN OF HEIGHT:

TITLE

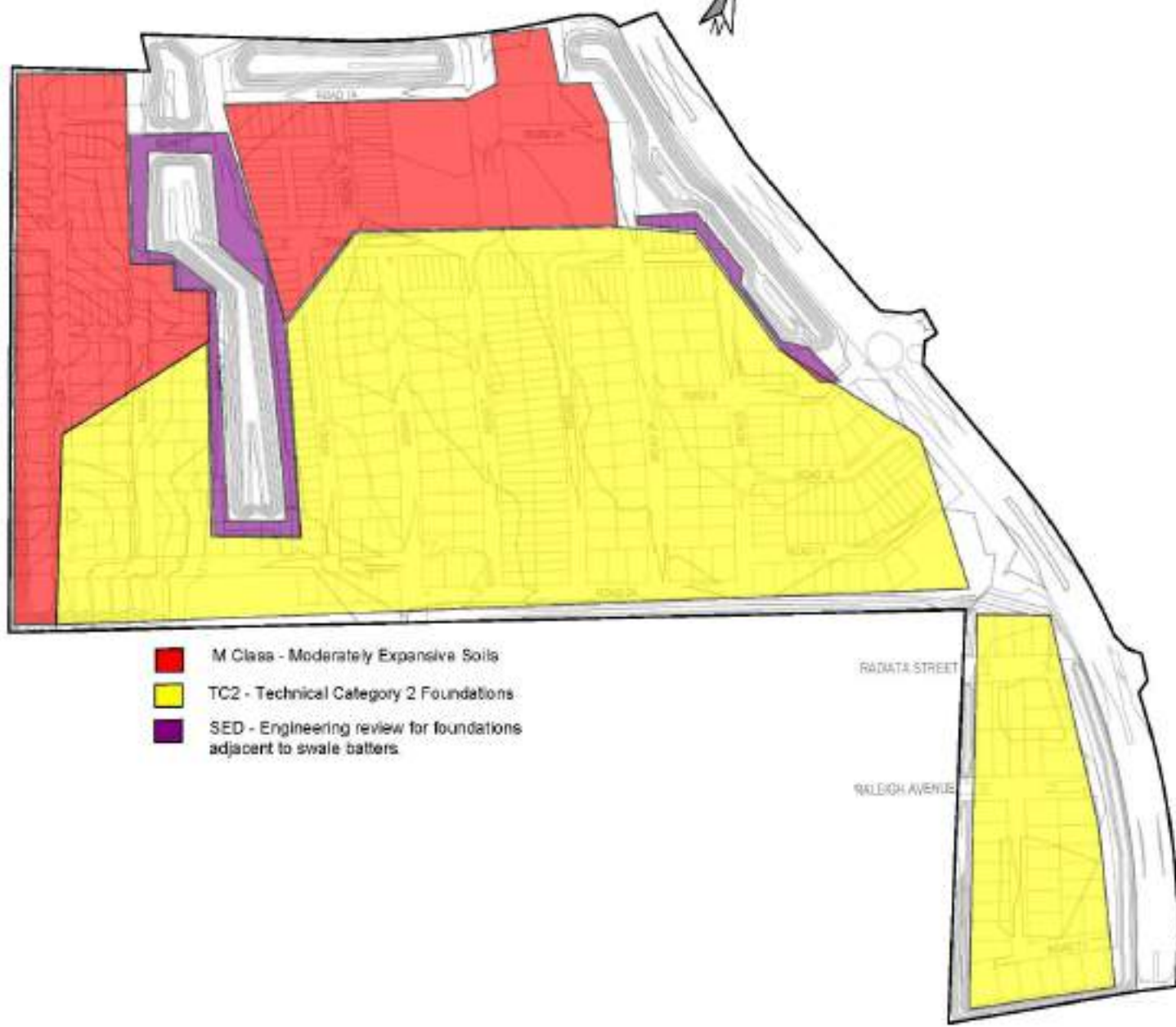
STAGES 16 & 17 CUT FILL PLAN

PREPARED FOR



STAGE 16 AND 17

ORIGINAL SCALES @ A3	STATUS
1:1500	AS-BUILT
DO NOT SCALE DIMENSIONS	
DRAWING NO	REVISION
30410-S16-17-EW1	2



- M Class - Moderately Expansive Soils
- TC2 - Technical Category 2 Foundations
- SED - Engineering review for foundations adjacent to swale batters

RADATA STREET

RALEIGH AVENUE

Summary			
Code	Name	Rev	Date
01	Issue	1	15/01/2024
02	Revised	1	15/01/2024
03	Issue	1	15/01/2024
04	Revised	1	15/01/2024
05	Issue	1	15/01/2024
06	Revised	1	15/01/2024
07	Issue	1	15/01/2024
08	Revised	1	15/01/2024
09	Issue	1	15/01/2024
10	Revised	1	15/01/2024

Preliminary Foundation Layout



Scale: 1:300
 Date: 15/01/2024
 Project: [Redacted]

Appendix B Geotechnical Completion Forms
Checklist 2.2 - Statement of Professional Opinion
Summary of Geotechnical Data for Individual Lots

Summary of Geotechnical Data for Individual Lots

DP No:	Property Address															Greenhill Park, Stage 16, Hamilton	RC No:	11/2019/7140/003	
Lot No:	Area (m ²)	Subsurface Data						Foundations			Building Restriction Line	S/W Specific Design	S/W Soakage	S/W Reticulated Platform	Designated Building Platform	Minimum Building Compressible Soils	On-site Effluent Disposal	Consent Notice	Comment
		Shear Strength (kPa)	Subdivision Filling		Natural Topography Unworked	Natural Topography Earth worked		Conventional Shallow Foundation to NZS 3604:2011	Specific Design										
			Y/N	Depth (m)	Y/N	Y/N	Depth (mm)	Y/N/NA	Y/N/NA										
450	412	140 - 205+	Y	0.2-2.0 ²	N	Y	200 ²	N	Y ³	Y	N ⁴	N	N	N	Y	N	N	Y	SED – Engineering review for foundations adjacent to swale batters.
451	367	205+	Y	0.2-0.6 ²	N	Y	200 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
452	379	186 - 205+	Y	0.2-0.8 ²	N	Y	200 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	Ground water at 1800mm.
453	391	179 – 205+	Y	0.2-1.2 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
454	322	127 – 205+	Y	0.2-1.2 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
455	330	205+	Y	0.2-1.4 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
456	559	90 – 205+	Y	0.2-1.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
457	345	107 – 205+	Y	0.2-0.3 ²	N	Y	3000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
458	345	167 – 205+	Y	0.2-0.3 ²	N	Y	4000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
459	345	107 – 205+	Y	0.2-0.5 ²	N	Y	4500 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
460	345	149 – 205+	Y	0.2-0.5 ²	N	Y	5000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
461	345	129 – 205+	Y	0.2-0.5 ²	N	Y	5000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
462	345	107 – 162	Y	0.2-0.5 ²	N	Y	5000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
463	425	114 – 205+	Y	0.2-0.5 ²	N	Y	4500 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
464	300	140 – 205+	Y	0.2-0.5 ²	N	Y	4500	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
465	425	156 – 205+	Y	0.2-0.5 ²	N	Y	4500	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
466	345	96 – 205+	Y	0.2-0.8 ²	N	Y	5000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
467	345	84 – 205+	Y	0.2-1.0 ²	N	Y	5000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
468	345	159 – 205+	Y	0.2-1.0 ²	N	Y	4500 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
469	345	96 – 205+	Y	0.2-1.0 ²	N	Y	3500 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
470	345	114 – 205+	Y	0.2-1.0 ²	N	Y	2000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
471	345	146 – 205+	Y	0.2-0.4 ²	N	Y	1200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
472	490	117 – 161	Y	0.2 ²	N	Y	4000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
473	441	111 – 205+	Y	0.2 ²	N	Y	4000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
474	447	96 – 186	Y	0.2 ²	N	Y	4000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
475	363	107 – 205+	Y	0.2 ²	N	Y	4000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
476	428	205+	Y	0.2 ²	N	Y	3500 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
477	434	140 – 205+	Y	0.2 ²	N	Y	3000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
478	400	104 – 159	Y	0.2-0.8 ²	N	Y	2000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
479	400	84 – 205+	Y	0.2-0.5 ²	N	Y	2000 ²	N	Y	Y	N ⁴	N	N	N	Y	N	N	Y	

Summary of Geotechnical Data for Individual Lots

DP No:	Property Address	Greenhill Park, Stage 16, Hamilton															RC No:	11/2019/7140/003	
Lot No:	Area (m ²)	Subsurface Data						Foundations		Building Restriction Line	S/W Specific Design	S/W Soakage	S/W Reticulated	Designated Building Platform	Minimum Building Compressible Soils	On-site Effluent Disposal	Consent Notice	Comment	
		Shear Strength (kPa)	Subdivision Filling		Natural Topography Unworked	Natural Topography Earth worked		Conventional Shallow Foundation to NZS 3604:2011	Specific Design										
			Y/N	Depth (m)	Y/N	Y/N	Depth (mm)	Y/N/NA	Y/N/NA										
480	396	143 – 205+	Y	0.2 ²	N	Y	1000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8001	212	156 – 205+	Y	0.2-1.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8002	182	156 – 205+	Y	0.2-1.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8003	184	134 – 205+	Y	0.2-2.0 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8004	185	134 – 205+	Y	0.2-2.0 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8005	213	161 – 205+	Y	0.2-1.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8006	215	161 – 205+	Y	0.2-1.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8007	190	114 – 205+	Y	0.2-1.2 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8008	191	114 – 205+	Y	0.2-1.0 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8009	193	167 – 205+	Y	0.2-0.6 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8010	194	167 – 205+	Y	0.2-0.4 ²	N	Y	1500 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8011	325	137 – 205+	Y	0.2 ²	N	Y	2000 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8012	272	130 – 205+	Y	0.2-0.5 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8013	177	130 – 205+	Y	0.2-0.5 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8014	177	104 – 205+	Y	0.2-0.8 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8015	177	104 – 205+	Y	0.2-1.0 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8016	177	111 – 205+	Y	0.2-1.0 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8017	212	111 – 205+	Y	0.2-1.0 ²	N	Y	2000 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8018	250	96 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8019	145	96 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8020	145	96 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	N	N ⁴	N	N	N	Y	N	N	Y	
8021	145	96 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8022	145	75 – 202	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8023	145	75 – 202	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8024	145	159 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ¹	Y	N ⁴	N	N	N	Y	N	N	Y	
8117	229	159 – 205+	Y	0.2-0.5 ²	N	Y	200 ²	N	Y ³	Y	N ⁴	N	N	N	Y	N	N	Y	SED – Engineering review for foundations adjacent to swale batters.

- NOTES:
- 1) M Class Foundations required.
 - 2) This considers approximately 200mm of topsoil removal across all lots prior to subdivision filling.
 - 3) Setback required for properties adjacent swales. TC2 type foundation to be adopted for all lots adjacent to swales. No foundations to be constructed <1.5m from top of slope. No specific engineer design required >3m from top of slope.
 - 4) Soakage testing is not required on individual lots. On site stormwater runoff reduction measures encouraged, i.e; Re-use tanks, filters, and catchpits.

Appendix C Laboratory Testing
Summary Plan
Fill Material Lab Testing.

PLASTICITY INDEX FOR SOILS
TEST REPORT



Project : Greenhill Park
 Location : Greenhill Park
 Client : DB Consulting Limited
 Contractor : -
 Sampled by : Client
 Date sampled : 9/10/2020
 Date received : 12/10/2020
 Sampling method : Bulk Sample
 Sample condition : As received

Project No : 2-68165.00
 Lab Ref No : HA6441_PI
 Client Ref No :

Test Results

Sample Lab Ref No : HA6441
 Sample Location ID : Not Stated
 Sample Depth (m) : Not Stated
 Soil Fraction Tested : $-425\mu\text{m}$
 Natural Water Content (%) : 50.8
 Liquid Limit : 111
 Plastic Limit : 50
 Plasticity Index : 61
 Sample Description : HA6441_PI CLAY with some silt and trace sand

Test Methods	Notes
Water Content NZS 4402 : 1986, Test 2.1	Soil fraction tested as shown.
Liquid Limit NZS 4402 : 1986, Test 2.2	
Plastic Limit NZS 4402 : 1986, Test 2.3	
Plasticity Index NZS 4402 : 1986, Test 2.4	

Date tested : 16/10/20
 Date reported : 21/10/20

Sampling is not covered by IANZ Accreditation. Results apply only to sample tested.
 This report may only be reproduced in full
 All information supplied by Client

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 21/10/20



All tests reported herein
 have been performed in
 accordance with the
 laboratory's scope of
 accreditation

PARTICLE SIZE ANALYSIS (WET SIEVE METHOD)

TEST REPORT

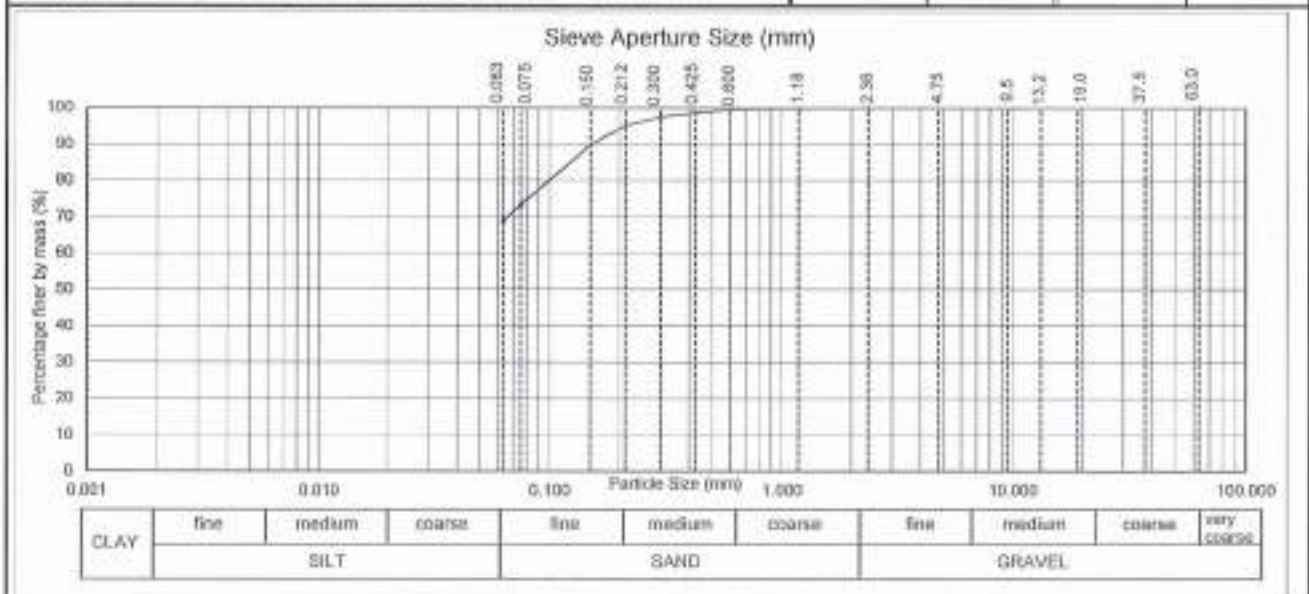


Project : Greenhill Park
 Location : Greenhill Park
 Client : DB Consulting Limited
 Client/Sample Ref : Not Stated
 Contractor : -
 Borehole No: Not Stated Depth: Not Stated
 Sampled by : Client
 Date received : 12/10/20
 Sampling method : Bulk Sample
 Sample condition : As received
 Sample description : Sandy CLAY/SILT
 Solid Particle Density (t/m^3): N/A
 Water Content (as received): 38.8 96

Project No: 2-68165.00
 Lab Ref No: HA6441_PSD
 Client Ref:

Sieve Analysis						Hydrometer Analysis			
Sieve Size (mm)	Passing (%)	Sieve Size (mm)	Passing (%)	Sieve Size (mm)	Passing (%)	Particle Size (mm)	Passing (%)	Particle Size (mm)	Passing (%)
63.0	-	4.75	-	0.300	97	-	-	-	-
37.5	-	2.36	100	0.212	95	-	-	-	-
19.0	-	1.18	100	0.150	90	-	-	-	-
13.2	-	0.600	99	0.075	73	-	-	-	-
9.5	-	0.425	99	0.063	69	-	-	-	-

Note: '-' denotes sieve not used and/or hydrometer analysis not tested



Test Methods	Notes
Particle Size Analysis NZS 6402:1986 Test 2.81 (Wet Sieve Method)	

Sampling is not covered by IANZ Accreditation. Results apply only to sample tested.

Date Tested: 19/10/20 This report may only be reproduced in full
 Date Reported: 21/10/20
 IANZ Approved Signatory: *DeVries*
 Designation: Senior Civil Engineering Technician
 Date: 21/10/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PARTICLE SIZE ANALYSIS (HYDROMETER METHOD)

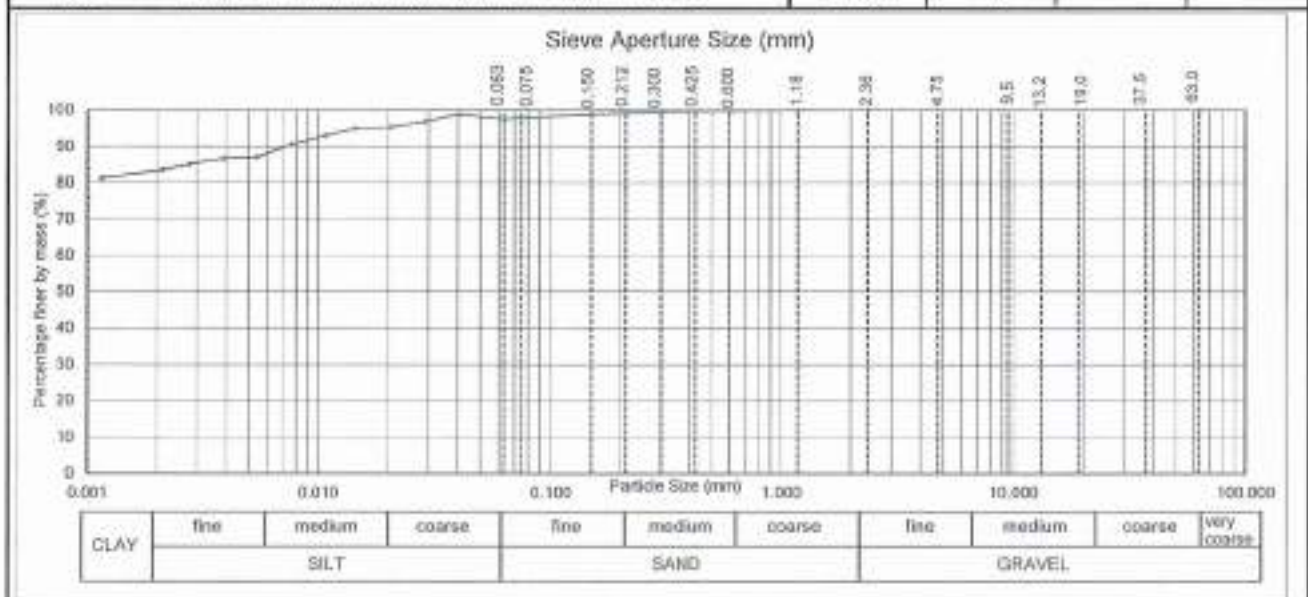
TEST REPORT



Project: Greenhill Park
 Location: Greenhill Park
 Client: DB Consulting Limited
 Client/Sample Ref: Not Stated
 Contractor: -
 Borehole No: Not Stated Depth: Not Stated
 Sampled by: Client
 Date received: 12/10/20
 Sampling method: Bulk Sample
 Sample condition: As received
 Sample description: CLAY with some silt and trace sand
 Solid Particle Density (t/m^3): 2.80 Assumed
 Water Content (as received): 50.8 96

Project No: 2-68165.00
 Lab Ref No: HA644L_PSA
 Client Ref:

Sieve Analysis						Hydrometer Analysis			
Sieve Size (mm)	Passing (%)	Sieve Size (mm)	Passing (%)	Sieve Size (mm)	Passing (%)	Particle Size (mm)	Passing (%)	Particle Size (mm)	Passing (%)
63.0	--	4.75	--	0.300	99	0.0403	99	0.0054	87
37.5	--	2.36	100	0.212	99	0.0288	97	0.0039	87
19.0	--	1.18	100	0.150	99	0.0205	95	0.0028	85
15.2	--	0.600	100	0.075	98	0.0145	95	0.0021	84
9.5	--	0.425	100	0.063	96	0.0107	93	0.0012	81
Note: "--" denotes sieve not used and/or hydrometer analysis not tested						0.0077	91		



Test Methods	Notes
Particle Size Analysis NZS 6402:1986 Test 2.8.4 (Washed Grading & Hydrometer Method)	pH of suspension: 8.0 (Whatmans Full Range pH Indicator paper) All information supplied by Client

Sampling is not covered by IANZ Accreditation. Results apply only to sample tested.

Date Tested: 20/10/20 This report may only be reproduced in full

Date Reported: 21/10/20

IANZ Approved Signatory

Designation: Senior Civil Engineering Technician

Date: 21/10/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**LINEAR SHRINKAGE FOR SOILS
TEST REPORT**



Project : Greenhill Park
 Location : Greenhill Park
 Client : DB Consulting Engineers Ltd
 Contractor : -
 Sampled by : Client
 Date sampled : 09/10/20
 Date received : 12/10/20
 Sampling method : Bulk Sample
 Sample condition : As received

Project No : 2-68165.00
 Lab Ref No : HA6441_L5
 Client Ref No :

Test Results	
Sample Lab Ref No :	HA6441
Location ID :	Not Stated
Sample Depth (m) :	Not Stated
Soil Fraction Tested :	-425µm
Sample History :	Natural
Water Content as Rec'd (%) :	50.8
Water Content at LS test (%) :	110.4
Linear Shrinkage (%) :	24
Sample Description : HA6441	CLAY with some silt and trace sand
Test Methods	Notes
Water Content NZS 4402 : 1986, Test 2.1 Linear Shrinkage NZS 4402 : 1986, Test 2.6	

Date tested : 20/10/20

Date reported : 21/10/20

Sampling is not covered by IANZ Accreditation. Results apply only to sample tested.

This report may only be reproduced in full

All information supplied by Client

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician

Date : 21/10/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

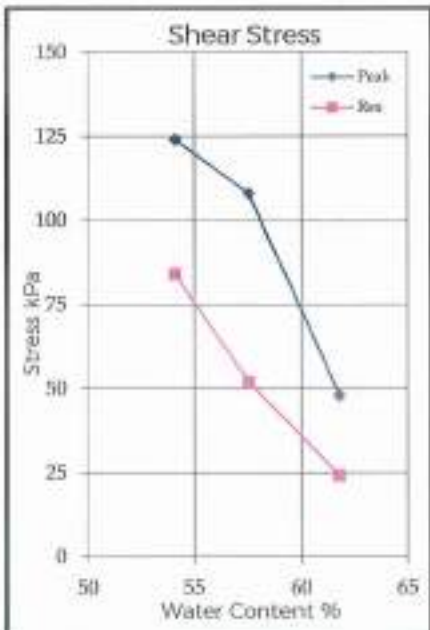
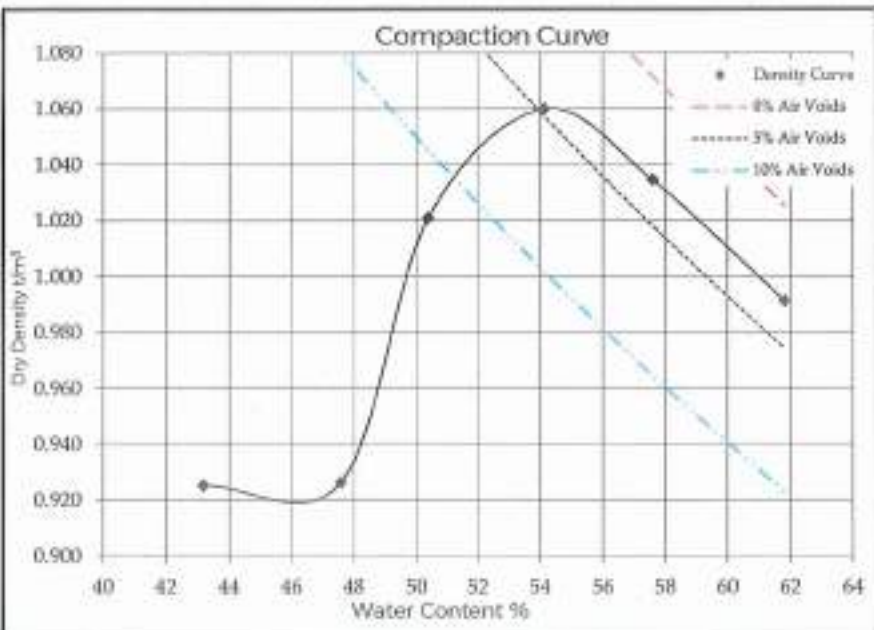
**DRY DENSITY / WATER CONTENT RELATIONSHIP
STANDARD COMPACTION**



Project : Greenhill Park
 Location : Greenhill Park
 Client : DB Consulting Engineers Ltd
 Contractor : -
 Sampled by : Client
 Date sampled : 9/10/20
 Sampling method : Bulk Sample
 Sample description : CLAY with some silt and trace sand, Reddish brown
 Sample condition : As received
 Solid density : 2.80 t/m³ (Assumed)
 Source : Not Stated

Project No : 2-68165.00
 Lab Ref No : HA6441/2_MDD
 Client Ref No :

Test Results							
Maximum dry density	1.06	t/m ³			Natural water content	50.4	%
Optimum water content	54	%			Fraction tested	100%	Passing 19mm sieve
Sample ID	-120	-60	Nat	60	120	180	
Bulk density	t/m ³	1.325	1.367	1.535	1.634	1.631	1.604
Water content	%	43.2	47.6	50.4	54.1	57.6	61.8
Dry density	t/m ³	0.925	0.926	1.021	1.060	1.035	0.991
Sample condition		Hard Dry	Hard Moist	V.Stiff Moist	Stiff Moist	Firm Moist-wet	Soft Wet
Peak stress	kPa	U.T.P	U.T.P	>192	124	108	48
Remoulded stress	kPa	-	-	>192	84	52	24



Test Methods	Notes
Compaction NZS 4402 : 1986 Test 4.1.1 (Standard)	All information supplied by Client
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc. Inc 8/2001	

Date tested : 21/10/20 Sampling is not covered by IANZ Accreditation, Results apply only to sample tested.
 Date reported : 27/10/20 This report may only be reproduced in full

IANZ Approved Signatory *[Signature]*
 Designation : Senior Civil Engineering Technician
 Date : 27/10/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Appendix D Post Construction Test Results
Soil Tests by CORE50
NDMs

Soil Testing



 **Hand Auger**



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 3/02/2022	Sheet No. 1	Test Site 450

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table	
			0	2 4 6 8 10 12 14 16			
100					TOPSOIL.		
200							
300							
400	UTP				ENGINEERED FILL: CLAY SILT, mix of brown and light grey, very stiff to hard, low moisture, high plasticity, moderately sensitive.		
500							
600							
700	167/33						
800							
900							
1000	>205/						1000mm: Becoming moist.
1100							1100mm: Becoming brown streaked light grey.
1200							
1300	143/53						1300mm: Becoming very stiff.
1400							
1500							
1600	134/53						
1700							
1800							
1900	>205/				1900mm: Becoming hard.		
2000					Clayey SILT, dark brown, hard, low moisture.		
2100	>205/				EOB at 2.0m, Target Borehole Depth		
2200							
2300							
2400							
2500							
2600							
2700							
2800							
2900							
3000							
3100							
3200							
3300							
3400							
3500							

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 2	Test Site 451

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					Topsoil	
200					ENGINEERED FILL: Clayey SILT, brown, streaked orange, very stiff	
300	>205/					
400					Clayey SILT, brown, streaked orange, very stiff, moist	
500						
600	>205/				Clayey SILT, brown, streaked orange and white, very stiff, moist	
700						
800					EOB @ 2m	
900	>205/					
1000					EOB @ 2m	
1100						
1200	>205/				EOB @ 2m	
1300						
1400					EOB @ 2m	
1500	>205/					
1600					EOB @ 2m	
1700						
1800					EOB @ 2m	
1900	>205/					
2000					EOB @ 2m	
2100						
2200					EOB @ 2m	
2300						
2400					EOB @ 2m	
2500						
2600					EOB @ 2m	
2700						
2800					EOB @ 2m	
2900						
3000					EOB @ 2m	
3100						
3200					EOB @ 2m	
3300						
3400					EOB @ 2m	
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 3	Test Site 452

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	186/36				ENGINEERED FILL: SILT with some clay and traces of fine pumiceous material and mica, orange brown grey streaks mottled orange, very stiff to hard, low moisture, high plasticity, sensitive.	
500						
600						
700	>205					
800						
900					SILT with some fine sand, grey mottled yellow, hard, low moisture, low moisture.	
1000	>205	3				
1100		4				
1200		3			1200mm: Becoming moist.	
1300		3			1300mm: Becoming sandy. Fine sand.	
1400		3				
1500		2			1500mm: Becoming traces of fine sand.	
1600		4				
1700		3				
1800		3			1800mm: Becoming wet.	
1900		4				
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was at 1800mm below ground level during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 4	Test Site 453

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table		
			0	2			4	6
100					Topsoil			
200								
300	>205/				ENGINEERED FILL: Clayey SILT, brown, streaked white, very stiff			
400								
500								
600	>205/				ENGINEERED FILL: Clayey SILT, brownish orange, streaked white			
700								
800								
900	>205/							
1000								
1100					Clayey SILT, streaked white, greyish brown, very stiff			
1200	186/67							
1300								
1400								
1500								
1600	>205/				Clayey SILT, grey, streaked orange, very stiff			
1700								
1800								
1900	179/51							
2000					EOB @ 2m			
2100								
2200								
2300								
2400								
2500								
2600								
2700								
2800								
2900								
3000								
3100								
3200								
3300								
3400								
3500								

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 5	Test Site 454

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	>205/					
400						
500	186/47				ENGINEERED FILL: CLAY SILT with traces of clay and fine sand, light grey mottled orange, very stiff, low moisture, low plasticity, moderately sensitive.	
600						
700	>205/					
800						
900	>205/					
1000						
1100	>205/				Silty CLAY with traces of mica and fine pumiceous material, orange brown streaked light brown, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
1200						
1300	127/36					
1400						
1500						
1600	130/36					
1700						
1800						
1900	127/33					
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 6	Test Site 455

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					Topsoil	
200					ENGINEERED FILL: Clayey SILT, brownish orange	
300	>205/					
400					ENGINEERED FILL: Clayey SILT, greyish brown, streaked orange	
500						
600	>205/					
700					Clayey SILT, greyish brown, streaked orange, little moist	
800						
900	>205/					
1000						
1100					EOB @ 2m	
1200	>205/					
1300						
1400						
1500						
1600	>205/					
1700						
1800						
1900	>205/					
2000						
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 7	Test Site 456

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	>205/				Silty CLAY with some sand, brown, hard, low moist.	
300						
400	146/66				ENGINEERED FILL: CLAY SILT with traces of fine sand and fine pumiceous material, orange brown, very stiff, low moisture, high plasticity, moderately sensitive.	
500						
600						
700	124/39				ENGINEERED FILL: SILT with traces of clay and fine sand, light grey mottled orange, very stiff, low moisture, low plasticity, moderately sensitive.	
800						
900						
1000	202/72					
1100						
1200					ENGINEERED FILL: Silty CLAY with traces of fine pumiceous and carbonaceous material, orange brown streaked pink, very stiff, low moisture, high plasticity, moderately sensitive.	
1300	186/79					
1400						
1500	>205/				SILT with some clay and traces of fine pumiceous material, grey mottled yellow, stiff, moist, low plasticity, sensitive.	
1600						
1700	96/12					
1800						
1900					SILT with some fine sand, light grey, stiff, moist, low plasticity, sensitive.	
2000	90/12					
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 3/02/2022	Sheet No. 8	Test Site 457

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400						
500	111/47				SILT with some clay, yellow cream brown, very stiff, low moisture, high plasticity, moderately sensitive.	
600						
700					900mm: Becoming light creamy brown.	
800	107/36					
900					1300mm: Becoming yellow cream.	
1000						
1100	114/42				SILT with minor clay and traces of mica, light grey speckled black, hard, low moisture, low plasticity.	
1200						
1300					Fine to coarse sand with some silt and carbonaceous.	
1400	156/53					
1500					CLAY SILT, reddish brown, very stiff, low moisture.	
1600						
1700	>205/				EOB at 2.0m, Target Borehole Depth	
1800						
1900	>205/					
2000						
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 9	Test Site 458

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					Topsoil	
200						
300	182/84				ENGINEERED FILL: CLAY, some silt, brown,	
400						
500						
600	>205/				CLAY, some silt, streaked orange	
700						
800						
900	>205/					
1000					Clayey SILT, reddish brown, streaked orange	
1100						
1200	>205/					
1300						
1400						
1500	167/44				Clayey SILT, reddish brown, streaked white, moist	
1600						
1700						
1800						
1900	184/48					
2000					EOB @ 2m	
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to test was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 10	Test Site 459

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					Topsoil	
200						
300	>205/				ENGINEERED FILL: CLAY some silt, brown	
400						
500						
600	>205/				Clayey SILT, brown, streaked orange	
700						
800						
900	181/72				Clayey SILT, brown, streaked orange and white	
1000						
1100						
1200	124/50					
1300						
1400						
1500	113/36				Clayey SILT, reddish brown, streaked greyish white, moist	
1600						
1700						
1800						
1900	107/52					
2000					EOB @ 2m	
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 11	Test Site 460

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					Topsoil	
200						
300	172/60				ENGINEERED FILL: CLAY, some silt, brown, little moist	
400						
500						
600	184/69				CLAY, some silt, streaked white and orange	
700						
800						
900	179/42					
1000						
1100					CLAY, some silt, reddish brown, streaked white, moist	
1200	>205/					
1300						
1400						
1500	149/39				Clayey SILT, reddish brown, moist	
1600						
1700						
1800					Clayey, SILT, reddish brown, moist, streaked greyish white	
1900	>205/					
2000					EOB @ 2m	
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 12	Test Site 461

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)													Soil Description	Water Table
			0	2	4	6	8	10	12	14	16						
100																Topsoil	
200																	
300	>205/																
400																	
500																ENGINEERED FILL: CLAY, some silt, greyish brown, little moist	
600	154/22																
700																	
800																	
900	>205/															CLAY, some silt, greyish brown, streaked orange, moist	
1000																	
1100																	
1200	185/48																
1300																Clayey SILT, greyish brown, wet	
1400																	
1500	>205/																
1600																	
1700																Clayey SILT, greyish brown, streaked orange, wet	
1800																	
1900	129/38																
2000																EOB @ 2m	
2100																	
2200																	
2300																	
2400																	
2500																	
2600																	
2700																	
2800																	
2900																	
3000																	
3100																	
3200																	
3300																	
3400																	
3500																	

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Greenhill Park Stage 16 Subdivision and Test Report		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by Jessel Ladwa	Date 23/06/2021	Sheet No. 13	Test Site 462

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)													Soil Description	Water Table
			0	2	4	6	8	10	12	14	16						
100																Topsoil	
200																	
300	122/38																
400																ENGINEERED FILL: CLAY, some silt, brown, little moist	
500																	
600	146/62																
700																CLAY, some silt, light brown, streaked white, wet	
800																	
900	137/33																
1000																	
1100																	
1200	107/26															Clayey SILT, greyish brown, wet	
1300																	
1400																	
1500	139/35																
1600																	
1700																Clayey SILT, greyish brown, streaked orange, wet	
1800																	
1900	162/32																
2000																EOB @ 2m	
2100																	
2200																	
2300																	
2400																	
2500																	
2600																	
2700																	
2800																	
2900																	
3000																	
3100																	
3200																	
3300																	
3400																	
3500																	

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1 Weather leading up to test was: Fine 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible 5 Shear Vane Serial No.: 1471 Exp. Date: 15/11/2022			



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 1/06/2021	Sheet No. 14	Test Site 463

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	210+				ENGINEERED FILL: Silt CLAY with traces of fine pumiceous material, brown, hard, low moisture, high plasticity.	
300						
400					SILT with minor clay and traces of fine sand, mica and pumiceous material, light grey streaked pink, hard, low moisture, low plasticity.	
500	210+					
600						
700					1400mm: Traces of carbonaceous material.	
800	210+					
900					1800mm: Becoming moist. 1900mm: Becoming very stiff.	
1000						
1100	210+				EOB at 2.0m, Target Borehole Depth	
1200						
1300	210+					
1400						
1500						
1600	210+					
1700						
1800						
1900	143/20					
2000						
2100	114/20					
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 1/06/2021	Sheet No. 15	Test Site 464

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	210+				ENGINEERED FILL: Silty CLAY with traces of fine pumiceous material, brown, hard, low moisture.	
300						
400						
500	210+				SILT with some of clay and fine sand and pumiceous material, creamy white streaked pink, hard, low moisture, low plasticity.	
600						
700						
800	210+					
900						
1000					1000mm: Becoming moist.	
1100	202/28				1100mm: Becoming sensitive.	
1200						
1300					1300mm: Becoming SILT.	
1400	159/24				1400mm: Becoming very stiff.	
1500					1500mm: Becoming very moist.	
1600						
1700	140/24					
1800						
1900	172/24					
2000	156/20					
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 1/06/2021	Sheet No. 16	Test Site 465

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	210+				ENGINEERED FILL: Silty CLAY with traces of mica and fine pumiceous material, brown streaked creamy white, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
300						
400					SILT with traces of clay and fine sand, creamy white mottled orange and brown, very stiff to hard, low moisture, low plasticity, extra sensitive.	
500	199/63					
600						
700					1000mm: Becoming moist. 1100mm: Becoming low sample retention.	
800	202/28					
900					1600mm: Becoming very moist.	
1000						
1100	202/24					
1200						
1300					EOB at 2.0m, Target Borehole Depth	
1400	199/28					
1500						
1600						
1700	172/24					
1800						
1900						
2000	156/20					
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 17	Test Site 466

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	156/39					
400					ENGINEERED FILL: SILT with some clay and traces of fine pumiceous material, creamy light brown, very stiff, low moisture, high plasticity, moderately sensitive.	
500	161/36					
600						
700						
800	>205/50				SILT with traces of clay, fine sand and pumiceous material, interbedded pink and creamy white, hard, low moisture, low plasticity, moderately sensitive.	
900						
1000						
1100	>205/42				1100mm: Becoming light brown.	
1200					1200mm: Becoming moist to very moist.	
1300					1300mm: Low sample retention.	
1400	96/20				1400mm: Becoming stiff.	
1500						
1600						
1700	124/29				1700mm: Becoming very stiff.	
1800						
1900	143/31					
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 18	Test Site 467

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300					ENGINEERED FILL: SILT with some clay, creamy light brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
400	167/47					
500					SILT with some fine sand traces of carbonaceous material.	
600	124/33					
700					SILT with some clay, light brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
800	146/47					
900					SILT with traces of clay and fine pumiceous material, creamy white mottled orange, hard, moist, high plasticity.	
1000						
1100	146/36				1400mm: Becoming light creamy orange brown. 1500mm: Becoming stiff, moist.	
1200						
1300	>205/81				1700mm: Low sample retention.	
1400						
1500	84/24				EOB at 2.0m, Target Borehole Depth	
1600						
1700	96/20					
1800						
1900	96/24					
2000						
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 19	Test Site 468

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200					ENGINEERED FILL: SILT with some clay and traces of carbonaceous material and mica, light brown streaked light grey mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
300	167/50					
400						
500	159/81				CLAY SILT with minor carbonaceous material and traces of mica and fine sands, dark reddish brown speckled black, hard, low moisture, high plasticity, moderately sensitive.	
600						
700						
800	>205/81				SILT with some clay and traces of fine pumiceous material, creamy light brown mottled red, very stiff to hard, low moisture, high plasticity.	
900						
1000	>205/81					
1100					EOB at 2.0m, Target Borehole Depth	
1200						
1300	>205/69					
1400					EOB at 2.0m, Target Borehole Depth	
1500	>205/					
1600						
1700					EOB at 2.0m, Target Borehole Depth	
1800	186/50					
1900						
2000	159/50				EOB at 2.0m, Target Borehole Depth	
2100						
2200						
2300					EOB at 2.0m, Target Borehole Depth	
2400						
2500						
2600					EOB at 2.0m, Target Borehole Depth	
2700						
2800						
2900					EOB at 2.0m, Target Borehole Depth	
3000						
3100						
3200					EOB at 2.0m, Target Borehole Depth	
3300						
3400						
3500					EOB at 2.0m, Target Borehole Depth	

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 20	Test Site 469

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table		
			0	2			4	6
100					TOPSOIL.			
200								
300								
400	127/50				ENGINEERED FILL: SILT with some clay and traces of mica and carbonaceous material, creamy light brown streaked white, stiff to very stiff, low moisture, high plasticity, moderately sensitive.			
500								
600								
700	96/36				900mm: Orange mottling.			
800								
900	127/47				CLAY SILT with traces of mica and fine pumiceous material, creamy light brown, very stiff, low moisture, high plasticity, moderately sensitive.			
1000								
1100	134/53							
1200					SILT with some clay and traces of fine pumiceous material, creamy white mottled orange, hard, low moisture, high plasticity.			
1300								
1400	183/66							
1500					EOB at 2.0m, Target Borehole Depth			
1600								
1700	>205/							
1800								
1900								
2000	>205/							
2100								
2200								
2300								
2400								
2500								
2600								
2700								
2800								
2900								
3000								
3100								
3200								
3300								
3400								
3500								

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 21	Test Site 470

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	167/79				ENGINEERED FILL: Clayey SILT with traces of mica and fine pumiceous material, creamy light brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
300						
400	193/79					
500						
600						
700	183/63					
800						
900						
1000	202/66				1000mm: Becoming hard.	
1100					1100mm: Streaked red.	
1200	>205/					
1300						
1400						
1500	150/53				SILT with some clay and traces of mica and fine pumiceous material, creamy light brown streaked red, very stiff, low moisture, high plasticity, moderately sensitive.	
1600						
1700						
1800	114/24				1800mm: Becoming moist.	
1900					1900mm: Low sample retention.	
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 12/06/2021	Sheet No. 22	Test Site 471

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	172/50				ENGINEERED FILL: Silty CLAY with traces of mica and fine pumiceous material, brown streaked creamy white, very stiff, low moisture, high plasticity, moderately sensitive.	
300						
400	161/53				ENGINEERED FILL: Clayey SILT with traces of mica and fine pumiceous material, yellow brown streaked red and white, hard, low moisture, high plasticity, moderately sensitive.	
500						
600						
700	205/53				SILT with some clay and traces of fine pumiceous material, light brown mottled orange, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
800						
900						
1000	>205/81				EOB at 2.0m, Target Borehole Depth	
1100						
1200	205/66					
1300						
1400						
1500	170/50					
1600						
1700						
1800	159/50					
1900						
2000	146/36					
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 23	Test Site 472

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	161/39				Silty CLAY with traces of fine sand, brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
400						
500						
600	143/39					
700					Clayey SILT with traces of mica, interbedded white pinkish brown, very stiff, low moisture, low plasticity, moderately sensitive.	
800						
900	143/36					
1000						
1100						
1200	124/36					
1300						
1400						
1500	127/24				1500mm: Becoming sensitive.	
1600						
1700						
1800	117/31				SILT with some clay, interbedded pink white and brown, very stiff, low moisture to moist, low plasticity, sensitive.	
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 24	Test Site 473

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400						
500	183/53				Silty CLAY with some mica, creamy white, very stiff, low moisture, high plasticity, moderately sensitive.	
600						
700					SILT with some fine sands and traces of clay, creamy light brown, hard, low moisture, low plasticity.	
800	210+					
900					CLAY SILT with traces of mica and carbonaceous material, dark brown, very stiff, low moisture, high plasticity, moderately sensitive.	
1000						
1100	199/50					
1200					Silty CLAY with traces of mica and fine sand and pumiceous material, creamy light brown, very stiff, low moisture, high plasticity, moderately sensitive.	
1300	172/60					
1400						
1500						
1600	143/47				EOB at 2.0m, Target Borehole Depth	
1700						
1800						
1900	161/50					
2000						
2100	111/39					
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 25	Test Site 474

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	140/63				Silty CLAY with traces of mica and fine pumiceous material, light brown mottled pink, very stiff, low moisture, high plasticity, moderately sensitive.	
400						
500						
600	114/45					
700						
800					CLAY SILT, white mottled pink and yellow, stiff to very stiff, low moisture to moist, high plasticity, moderately sensitive.	
900	186/63					
1000						
1100					1600mm: Some yellow mottling.	
1200	96/28					
1300					EOB at 2.0m, Target Borehole Depth	
1400						
1500	127/33					
1600						
1700						
1800	167/60					
1900						
2000						
2100	170/69					
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 26	Test Site 475

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table		
			0	2			4	6
100					TOPSOIL.			
200								
300								
400	210+				CLAY SILT with traces of mica and carbonaceous material and fine pumiceous material, dark brown speckled black, hard, low moisture, high plasticity.			
500								
600								
700	210+				Clayey SILT with traces of mica and fine pumiceous material, creamy light brown, hard, low moisture, high plasticity, moderately sensitive.			
800								
900								
1000	210+				SILT with some clay, pink brown streaked white, very stiff, moist to very moist, low plasticity, moderately sensitive.			
1100								
1200	202/79							
1300					EOB at 2.0m, Target Borehole Depth			
1400								
1500	107/33							
1600								
1700								
1800	172/53							
1900								
2000								
2100								
2200								
2300								
2400								
2500								
2600								
2700								
2800								
2900								
3000								
3100								
3200								
3300								
3400								
3500								

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by AK	Date 20/05/2021	Sheet No. 27	Test Site 476

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	210+				CLAY with some silt, dark brown, hard, low moisture, high plasticity.	
400						
500						
600	210+					
700					Silty CLAY with traces of fine pumiceous material and carbonaceous material, very stiff to hard, low moisture, high plasticity.	
800						
900	210+					
1000						
1100					1100mm: Becoming pinkish brown.	
1200	210+					
1300						
1400						
1500	210+					
1600						
1700					CLAY SILT with traces of mica and carbonaceous material, white mottled pink and orange, very stiff to hard, low moisture, high plasticity.	
1800	210+					
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by AK	Date 20/05/2021	Sheet No. 28	Test Site 477

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	186/50				CLAY SILT, light brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
500						
600						
700	180/53				Clayey SILT with traces of fine pumiceous material, pinkish light brown mottled orange, hard, low moisture, high plasticity.	
800						
900						
1000	210+				SILT with some fine sand and traces of clay, Interbedded creamy white and light brown, very stiff, low moisture, high plasticity, moderately sensitive.	
1100						
1200						
1300	210+				EOB at 2.0m, Target Borehole Depth	
1400						
1500						
1600	146/36					
1700						
1800	140/39					
1900						
2000						
2100	153/39					
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 29	Test Site 478

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	159/63				ENGINEERED FILL: CLAY with some silt and traces of mica and fine pumiceous material, light brown streaked yellow, very stiff, low moisture, high plasticity, moderately sensitive.	
500						
600						
700	107/36				Silty CLAY with traces of mica, light brown mottled yellow, very stiff, low moisture, high plasticity, moderately sensitive.	
800						
900						
1000	114/39				1800mm: Becoming moist to very moist.	
1100						
1200						
1300	104/36				EOB at 2.0m, Target Borehole Depth	
1400						
1500						
1600	111/42					
1700						
1800						
1900	104/42					
2000						
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 30	Test Site 479

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	UTP					
400						
500						
600	84/24				ENGINEERED FILL: CLAY with some silt and traces of mica, yellow brown, hard, low moisture, high plasticity. 600mm: Moist, stiff.	
700						
800						
900	146/66				Silty CLAY with traces of mica, light brown mottled yellow, very stiff, low moisture, high plasticity, moderately sensitive.	
1000						
1100						
1200	111/39					
1300						
1400						
1500	137/66					
1600						
1700						
1800	130/60					
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 20/05/2021	Sheet No. 31	Test Site 480

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	210+				ENGINEERED FILL: CLAY with some silt and carbonaceous material, dark brown speckled black, hard, low moisture, high plasticity.	
400						
500						
600	159/66				Silty CLAY with some mica and traces of carbonaceous material, light brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
700						
800						
900	175/107					
1000					CLAY SILT with traces of carbonaceous and pumiceous material, dark brown, very stiff, low moisture, high plasticity, moderately sensitive.	
1100						
1200	159/63					
1300						
1400						
1500	172/81					
1600					Clayey SILT with traces of pumiceous material, light brown mottled orange, very stiff, low moisture, high plasticity.	
1700						
1800	143/50					
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 19/05/2021	Sheet No. 32	Test Site 8001-8002

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	156/50				ENGINEERED FILL: Silty CLAY, Interbedded reddish brown and light brown, very stiff, low moisture, low plasticity, moderately sensitive.	
500						
600						
700	202/47					
800						
900						
1000	202/53					
1100					1100mm: Becoming yellow brown.	
1200						
1300	202/47					
1400					1400mm: Traces of iron staining, yellow orange mottling.	
1500						
1600	210+					
1700						
1800					SILT with traces of clay, white light grey, hard, low moisture, low plasticity.	
1900	210+					
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 19/05/2021	Sheet No. 33	Test Site 8003-8004

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	156/47				ENGINEERED FILL: Silty CLAY, brown, very stiff, low moisture, high plasticity, moderately sensitive.	
400						
500						
600	170/50				600mm: Interbedded white and yellow brown.	
700						
800						
900	210+				900mm: Becoming clayey SILT, interbedded yellow brown.	
1000						
1100						
1200	210+				SILT with traces of fine sand, light grey with yellow mottling, very stiff to hard, low moisture, low plasticity.	
1300						
1400						
1500	210+					
1600						
1700						
1800	134/42				1900mm: Becoming very moist.	
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name		Job Ref.	
Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		171738-AREA-LUK-S16-01	
Tested by	Date	Sheet No.	Test Site
AK	31/08/2021	34	8005-8006

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	161/60				ENGINEERED FILL: Silty CLAY, interbedded white and brown, very stiff, low moisture, low plasticity, moderately sensitive.	
500						
600					800mm: Traces of mica.	
700	193/50				900mm: Becoming brown.	
800					1000mm: Becoming hard.	
900						
1000	210+				12000mm: Moderate orange mottling.	
1100						
1200						
1300	210+				1500mm: Becoming light brown.	
1400						
1500						
1600	210+					
1700					SILT with traces of fine sand, light grey with yellow mottling, very stiff to hard, low moisture, low plasticity.	
1800						
1900	210+					
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 19/05/2021	Sheet No. 35	Test Site 8007-8008

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200					ENGINEERED FILL: Silty CLAY, interbedded white yellow and light brown, very stiff, low moisture, high plasticity, moderately sensitive.	
300						
400	167/50					
500					700mm: Becoming brown. 800mm: Traces of mica.	
600						
700	202/47					
800					CLAY SILT with traces of fine sand, traces of rootlets, light grey streaked brown, very stiff to hard, low moisture.	
900						
1000	114/36					
1100					EOB at 2.0m, Target Borehole Depth	
1200						
1300	210+					
1400					EOB at 2.0m, Target Borehole Depth	
1500						
1600	210+					
1700					EOB at 2.0m, Target Borehole Depth	
1800						
1900	210+					
2000					EOB at 2.0m, Target Borehole Depth	
2100						
2200						
2300					EOB at 2.0m, Target Borehole Depth	
2400						
2500						
2600					EOB at 2.0m, Target Borehole Depth	
2700						
2800						
2900					EOB at 2.0m, Target Borehole Depth	
3000						
3100						
3200					EOB at 2.0m, Target Borehole Depth	
3300						
3400						
3500					EOB at 2.0m, Target Borehole Depth	

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 19/05/2021	Sheet No. 36	Test Site 8009-8010

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	210+					
400					ENGINEERED FILL: CLAY SILT, interbedded white orange and brown, very stiff to hard, low moisture, high plasticity.	
500						
600	167/79					
700					700mm: Minor orange mottling.	
800					800mm: Traces of mica.	
900	210+					
1000						
1100					1100mm: Becoming brown.	
1200	210+					
1300					1300mm: Becoming some clay.	
1400						
1500	210+				Clayey SILT with traces of mica, white light grey, very stiff, low moisture, low plasticity, moderately sensitive.	
1600						
1700					Silty CLAY, dark brown with some iron staining, hard, low moisture, high plasticity.	
1800	210+					
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16- 01	
Tested by AK	Date 19/05/2021	Sheet No. 37	Test Site 8011

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	210+					
400					ENGINEERED FILL: Silty CLAY, interbedded white light brown and orange brown, very stiff to hard, low moisture, high plasticity, moderately sensitive. 700mm: Some orange mottling. 800mm: Becoming brown.	
500						
600	172/81					
700						
800						
900	153/69					
1000						
1100						
1200	137/36					
1300						
1400						
1500	140/47					
1600						
1700						
1800	210+				Silty CLAY, dark brown with some iron staining, hard, low moisture, high plasticity.	
1900						
2000					EOB at 2.0m, Target Borehole Depth	
2100						
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 3/02/2022	Sheet No. 38	Test Site 8012-8013

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	>205/				ENGINEERED FILL: CLAY SILT, yellow brown mottled orange, hard, low moisture, high plasticity.	
400						
500						
600	>205/				ENGINEERED FILL: Silty CLAY, yellow brown mottled orange, very stiff to hard, low moisture, high plasticity, moderately sensitive. 800mm: Becoming orange brown.	
700						
800						
900	150/87					
1000						
1100					1100mm: Carbonaceous material.	
1200	186/53					
1300						
1400					SILT with minor clay, light grey mottled orange, very stiff, moist, high plasticity, moderately sensitive.	
1500	172/45					
1600						
1700	130/36				1600mm: Some carbonaceous material.	
1800						
1900						
2000	143/36					
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name		Job Ref.	
Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		171738-AREA-LUK-S16-01	
Tested by	Date	Sheet No.	Test Site
AK	3/02/2022	39	8014-8015

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200	UTP				ENGINEERED FILL: CLAY SILT, mix of brown and light grey, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
300						
400					ENGINEERED FILL: CLAY minor silt, yellow brown, very stiff, low moisture, high plasticity, moderately sensitive.	
500	146/63					
600						
700					700mm: Becoming dark brown mottled orange.	
800	184/39				800mm: Becoming some carbonaceous material.	
900						
1000						
1100	156/66				1100mm:: Becoming orange brown.	
1200						
1300					1300mm: Carbonaceous material.	
1400	202/53					
1500						
1600					SILT with some clay, yellow brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.	
1700	104/36					
1800						
1900						
2000	143/36					
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 3/02/2022	Sheet No. 40	Test Site 8016-8017

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table	
			0	2 4 6 8 10 12 14 16			
100					TOPSOIL.		
200							
300	143/50						
400					ENGINEERED FILL: CLAY minor silt, orange brown mottled red, very stiff to hard, low moisture, high plasticity, moderately sensitive. 800mm: Becoming yellow brown mottled orange. 900mm: Becoming CLAY SILT.		
500							
600	UTP						
700							
800							
900	186/84						
1000							
1100							
1200	199/79						
1300							SILT with some clay, creamy yellow brown mottled orange, very stiff, low moisture, high plasticity, moderately sensitive.
1400	143/45						
1500							
1600							
1700	111/39						
1800							
1900							
2000	140/47						
2100					EOB at 2.0m, Target Borehole Depth		
2200							
2300							
2400							
2500							
2600							
2700							
2800							
2900							
3000							
3100							
3200							
3300							
3400							
3500							

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 41	Test Site 8018

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	114/42				ENGINEERED FILL: Silty CLAY traces of mica and carbonaceous material, dark brown speckled black, very stiff, low moisture.	
400						
500	98/31					
600					Clayey SILT with minor fine pumiceous material and traces of mica, light brown mottled orange, stiff, low moisture, high plasticity, moderately sensitive.	
700	96/24					
800						
900	98/33				800mm: Becoming moist, low plasticity.	
1000						
1100	205/69				1100mm: Becoming hard.	
1200					1200mm: Streaked light brown.	
1300	>205/					
1400						
1500	202/45				1500mm: Becoming moist.	
1600						
1700						
1800	>205/				SILT with some fine to medium sand, moist.	
1900						
2000	>205/				Clayey SILT with traces of mica and carbonaceous material, dark reddish brown, hard, low moisture.	
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 42	Test Site 8020

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	>205/					
400					ENGINEERED FILL: CLAY SILT with traces of mica and fine pumiceous material, light brown, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
500						
600	130/47					
700						
800	111/39				800mm: Becoming moist.	
900					900mm: Becoming creamy light brown.	
1000	114/36					
1100					CLAY with some silt and traces of mica and fine pumiceous material, grey mottled yellow, very stiff, low moisture, high plasticity, moderately sensitive.	
1200	111/24					
1300						
1400	96/24					
1500						
1600						
1700	96/33					
1800						
1900	111/36					
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 43	Test Site 8022-8023

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300	202/50				ENGINEERED FILL: CLAY SILT with traces of mica, light grey and yellow brown, hard, dry, high plasticity, moderately sensitive.	
400						
500	107/47					
600					SILT with traces of clay, mica and carbonaceous material, grey brown speckled black, stiff to very stiff, low moisture, low plasticity, moderately sensitive.	
700	75/31					
800						
900	84/20					
1000						
1100	134/31				Silty CLAY, yellow brown, very stiff, moist.	
1200						
1300	98/20				Clayey SILT with traces of fine pumiceous material and carbonaceous material, yellow brown, stiff, low moisture, high plasticity, sensitive.	
1400						
1500	96/20					
1600					1600mm: Becoming moist.	
1700					1700mm: Becoming some clay.	
1800	81/20				1800mm: Becoming very moist.	
1900						
2000						
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	



Project Name Subdivision Test & Report Area LUK; Stage 16, Greenhill Park, Hamilton		Job Ref. 171738-AREA-LUK-S16-01	
Tested by AK	Date 23/06/2021	Sheet No. 44	Test Site 8024-8117

Depth (mm)	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm)		Soil Description	Water Table
			0	2 4 6 8 10 12 14 16		
100					TOPSOIL.	
200						
300						
400	>205/				ENGINEERED FILL: SILT with some fine sand, interbedded light grey brown, very stiff to hard, low moisture, low plasticity.	
500						
600						
700	159/53				Silty CLAY with some carbonaceous material, traces of mica and fine pumiceous material, dark reddish brown, very stiff, low moisture, high plasticity, moderately sensitive.	
800						
900	180/63					
1000						
1100	190/53					
1200					CLAY SILT with traces of fine pumiceous material, yellow brown, very stiff to hard, low moisture, high plasticity, moderately sensitive.	
1300						
1400	>205/					
1500						
1600						
1700	186/36					
1800					1800mm: Becoming some clay.	
1900					1900mm: Low sample retention.	
2000	>205/					
2100					EOB at 2.0m, Target Borehole Depth	
2200						
2300						
2400						
2500						
2600						
2700						
2800						
2900						
3000						
3100						
3200						
3300						
3400						
3500						

Notes:	EOB = End Of Borehole	UTP = Unable To Penetrate	UTE = Unable To Extract
1	Weather leading up to testing was: Fine		
2	Ground water was not encountered during testing		
3	Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)		
4	Shear Vane records include Re-moulded values where possible		
5	Shear Vane Serial No.: 1471	Exp. Date: 15/11/2022	

NDM Direct Transmission



Earth Fill at Greenhill Park, Stage 16. Lot 450 SRP Backfill.

Soil Material: Silty Clay
 Solid Density kg/m³: 2800 (Assumed)
 Maximum Dry Density kg/m³: 1060 Report# HA6441/2
 Optimum Moisture Content: 54.0 %
 Average Field Moisture Content: 44.9 %

Date: 17/01/2022

Site Tech: AK

Targets	Average	Min	Max
Compaction PR%:	≥ 95	90	-
Air Voids AV%:	≤ 10	-	12
Shear Strength kPa:	≥ 140	100	-
Degree of Saturation:	-	-	-

Test Average	Value
Compaction PR%	107
Air Voids AV%	8
Shear Strength kPa	200
Degree of Saturation	86

Test Methods : Shear Strength (Shear vane NZGS 2001): Nuclear Densometer Testing (NZS 4407:2015 Test 4.2)

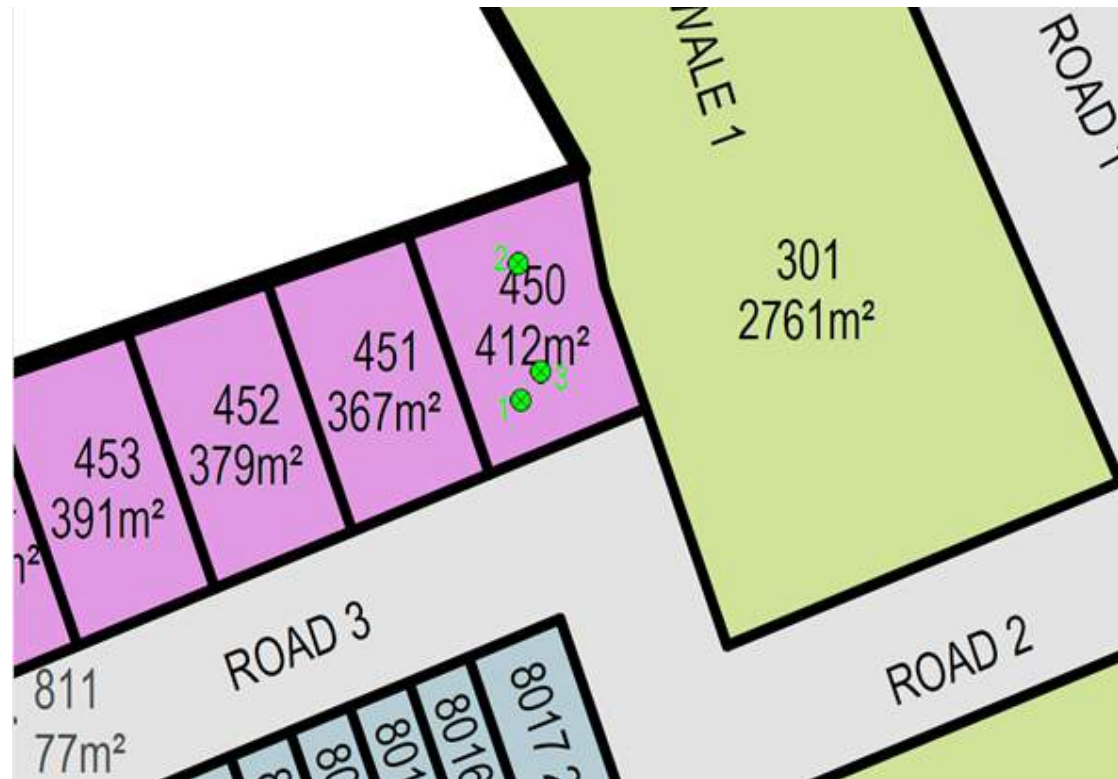
Test#	Test Location: Refer Sketch			Layer Thickness mm	Probe Depth mm	Wet Density kg/m ³	Moisture Content MC%	Dry Density kg/m ³	Degree of Saturation DOS	Air Voids AV%	Compaction PR%	Field Shear Strength (kPa). Shear Vane S/N: 1471				Average kPa
	RL											Test A	Test B	Test C	Test D (probe hole)	
1	37.900			500	300	1655	44.6	1145	86	8	108	210+	210+	210+	210+	210
2	37.800			500	300	1591	45.0	1097	81	11	104	210+	210+	210+	210+	210
3	37.300			500	300	1699	45.0	1172	91	5	111	150	207	210+	153	180

NDM Direct Transmission



Earth Fill at Greenhill Park, Stage 16. Lot 450 SRP Backfill.

Date: 17/01/2022



NDM Direct Transmission



Earth Fill at Greenhill Park, Stage 16.

Soil Material: Silty Clay
 Solid Density kg/m³: 2800 (Assumed)
 Maximum Dry Density kg/m³: 1060 Report# HA6441/2
 Optimum Moisture Content: 54.0 %
 Average Field Moisture Content: 52.3 %

Date: 22&23/01/2022

Site Tech: AK

Targets	Average	Min	Max
Compaction PR%:	≥ 95	90	-
Air Voids AV%:	≤ 10	-	12
Shear Strength kPa:	≥ 140	100	-
Degree of Saturation:	-	-	-

Test Average	Value
Compaction PR%	102
Air Voids AV%	5
Shear Strength kPa	169
Degree of Saturation	92

Test Methods : Shear Strength (Shear vane NZGS 2001): Nuclear Densometer Testing (NZS 4407:2015 Test 4.2)

Test#	Test Location: Refer Sketch			Layer Thickness mm	Probe Depth mm	Wet Density kg/m ³	Moisture Content MC%	Dry Density kg/m ³	Degree of Saturation DOS	Air Voids AV%	Compaction PR%	Field Shear Strength (kPa). Shear Vane S/N: 1471				
	RL											Test A	Test B	Test C	Test D (inside probe hole)	Average kPa
1	39.900			500	300	1676	50.0	1117	93	4	105	150	150	132	180	153
2	38.800			500	300	1652	49.8	1103	91	6	104	159	195	186	150	173
3	38.520			500	300	1607	50.0	1071	87	8	101	210+	135	180	162	168
4	38.000			500	300	1663	51.7	1096	93	4	103	204	174	150	198	182
5	40.000			500	300	1642	51.4	1085	91	6	102	156	156	210+	183	167
6	41.700			500	300	1656	52.3	1087	93	4	103	165	165	135	141	152
7	39.000			500	300	1617	57.1	1029	93	4	97	165	150	180	165	165
8	39.600			500	300	1690	56.4	1081	99	0	102	210+	210+	150	195	191

NDM Direct Transmission



Earth Fill at Greenhill Park, Stage 16. Lot 450 SRP Backfill.

Date: 22&23/01/2022



Appendix E Stormwater Management
(Minimum Lot Levels)

R:\Project Files\30410-01-1901 Drawing Presentation Files\19-30410-01 - Stage 16 Geotech Requirement Levels and Flow.dwg - Plotted: 16/03/2022



LOT NUMBER	LOWEST LEVEL	MINIMUM FINISHED FLOOR LEVEL (FFL)
450	38.20	38.60
451	38.39	38.60
452	38.43	38.60
453	38.54	38.69
454	38.65	38.80
455	38.85	39.00
456	38.96	39.11
457	38.89	39.04
458	39.18	39.33
459	39.31	39.46
460	39.38	39.53
461	39.52	39.67
462	40.04	40.19
463	41.00	41.15
464	42.10	42.25
465	42.40	42.55
466	42.00	42.15
467	41.53	41.68
468	41.50	41.65
469	40.88	41.03
470	40.30	40.45
471	39.50	39.65
472	41.50	41.65
473	42.20	42.35
474	42.60	42.75
475	42.90	43.05
476	43.20	43.35
477	43.50	43.65
478	42.42	42.57
479	41.50	41.65
480	40.40	40.55
8001	38.75	38.90
8002	38.93	39.08
8003	39.15	39.30
8004	39.30	39.45
8005	39.45	39.60
8006	39.80	39.95
8007	40.10	40.25
8008	40.35	40.50
8009	40.60	40.75
8010	40.77	40.92
8011	41.00	41.15
8012	38.40	38.60
8013	38.38	38.60
8014	38.33	38.60
8015	38.30	38.60
8016	38.30	38.60
8017	38.30	38.60
8018	39.50	39.65
8019	39.55	39.70
8020	39.57	39.72
8021	39.52	39.67
8022	39.60	39.75
8023	39.60	39.75
8024	39.60	39.75
8117	39.25	39.40


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LEGEND:

- 38.2 SPOT HEIGHT GROUND LEVEL*
- SLOPE ARROW
- TOP OF BANK
- BOTTOM OF BANK

*GROUND LEVELS ARE NOT TO BE USED FOR BUILDING DESIGN.

Rev	DESCRIPTION	DRN	CKD	APP	DATE
0	PRELIMINARY	NW	BP	BP	03/22
1	ISSUED TO GEOTECH	NW	BP	GDC	03/22
2	TABLE UPDATED LOT 450	NP	BP	GC	03/22
3	FFL UPDATED	NP	BP	GC	03/22
4	FFL UPDATED	NP	BP	GC	03/22

NAME	DATE	NAME	DATE
SURVEYED		DESIGNED	

COORDINATE SYSTEM: NZGD 2000 - MOUNT EDEN
 ORIGIN OF COORDINATES:
 HEIGHT DATUM: MOTURIKI LVD 1953
 ORIGIN OF HEIGHT:

**SECTIONS LEVELS
 AND FLOW -
 GEOTECHNICAL
 REQUIREMENT**

PREPARED FOR



STAGE 16
 ORIGINAL SCALES @ A3 STATUS
 1:1000 AS-BUILT
 DO NOT SCALE DIMENSIONS
 DRAWING NO. **30410-01-S16-G1** REVISION **4**

APPENDIX 2

Roading QA Documentation

Road Subgrade – 2(a)

- Drawing 30410-01-S16-BR1 (in lieu of strings)
- Clegg Hammer Tests
-

Road Subbase – 2(b)

- Drawing 30410-01-S16-BR2 (in lieu of strings Road 1)
- Clegg Hammer Tests
- WHAP 65 material test
- Email HCC confirmation to WHAP 65 from GAP 65

Road Basecourse 2(c)

- Nuclear Densometer Results
- Benkelman Beam Test Results
- Basecourse Strings
- TNZ M/4 AP40 Material Tests

Surfacing & RAMM Data 2(d)

- HCC pavement RAMM data
- Surfacing RAMM data

APPENDIX 2(a)

Roading QA Documentation

Road Subgrade

- Drawing 30410-01-S16-BR1 (in lieu of strings)
- Clegg Hammer Tests



COMPACTION - CLEGG TESTS

Contract	Stage 16 GHP	Job No.	
Site/Chainage	Road 3	Date	5/10/2021
Material	Brown rock SIL	Recorded by	Jordan Allen

Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes
0	24			
10		26		
20			20	
30	33			
40		36		
50			26	
60	46			
70		44		
80			20	
90	29			
100		36		
110			29	
120	24			
130		29		
140			33	
150	29			
160		33		
170			27	
180	25			
190		37		
200			39	
210	33			
220		45		
230			28	
240	30			
250		27		
260			25	

Source of conversion: $Inferred\ CBR\% = 0.07(Impact\ Value)^2 / 100$

Remarks _____

APPENDIX 2(b)

Roading QA Documentation

Road Subbase

- Drawing 30410-01-S16-BR2 (in lieu of strings)
- Clegg Hammer Tests
- WHAP 65 material test
- Email HCC confirmation to WHAP 65 from GAP 65



NOTES:

DEPTHS CALCULATED FROM
ONLINE CONSTRUCTORS
MEASUREMENTS V DESIGN
SURFACE

TARGET DEPTHS
CHILMAN TERRACE 0.19m

MEASUREMENTS TAKEN
TO GAP65 AGGREGATE LAYER

CHILMAN TERRACE

(ROAD 1)

(ROAD 2A)

301

20

40

8

8

20

8

100

QUALITY ASSURANCE
ROAD 1 - COMPARISON OF
GAP65 VERUS DESIGN
GREENHILL PARK
STAGE 16 AREA LUK

REV	DESCRIPTION	DRN	CKD	APP	DATE	COORDINATE SYSTEM: MT EDEN 2000 CIRCUIT
0	PRELIMINARY	SRC	BP	GC	03/22	ORIGIN OF COORDINATES: ALP 5 DP 543161
1	ISSUE TO HCC	SRC	BP	GC	03/22	HEIGHT DATUM: MOTURIKI DATUM 1953
						ORIGIN OF HEIGHT: SS 507 SO 42451 RL = 44.04m
						ORIGINAL SCALES @ A3 STATUS
						1:250
						AS-BUILT
						DO NOT SCALE DIMENSIONS
						DRAWING NO
						30410-01-S16-BR2
						REVISION
						1
	NAME	DATE		NAME	DATE	
	SURVEYED	OLC	2021	DESIGNED		



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LAND SPECIALISTS

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P.O. Box 231, Taupo, 3201
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BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project: Greenhill - Stage 16
Location: Road 1
Client: Online Contractors (2016) Limited
Contractor: Online Contractors (2016) Limited
Tested by: J. Waru-Savage
Date tested: 14/01/22

Sample description: WHAP65 (ex Tauhei Quarry)
Nuclear densimeter no: 62451
Solid density (tested): 2.71 t/m³
Max dry density (tested): 2.14 t/m³
Opt. water content (tested): 5.0 %

Project No: 2-68015.00
Lab Ref No: HA8438_NDM
Client Ref No:

Nuclear Densometer Test Results										
Test Number	1	2	3	4	5	6	7	8	9	10
Test Position	CH20	CH30	CH40	CH50	CH60	CH70	CH80	CH90	CH00	CH10
Offset	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S
Wet Density (t/m ³)	2.26	2.23	2.33	2.29	2.30	2.31	2.18	2.32	2.23	2.34
Dry Density (t/m ³)	2.18	2.18	2.29	2.22	2.23	2.24	2.13	2.25	2.17	2.26
Water Content (%)	3.4	2.7	2.1	3.3	3.5	3.0	2.4	2.9	2.7	3.3
% of MDD	102	102	107	104	104	105	100	105	102	106
% Saturation	39	30	31	40	44	39	24	39	30	45

Oven Corrected Test Results

Dry Density (t/m ³)										
Water Content (%)										
% of MDD										
% Saturation										

NOT TESTED

Test Methods
 (In situ Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode)
 (MDD from WSP Hamilton Laboratory - Report No: HA798772_VHMDD (November 2021))

IANZ Approved Signatory

Designation: Senior Civil Engineering Technician
 Date: 14/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

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PE-LAB-037 (01/07/2020)

**WEATHERING QUALITY OF COARSE AGGREGATE
TEST REPORT**



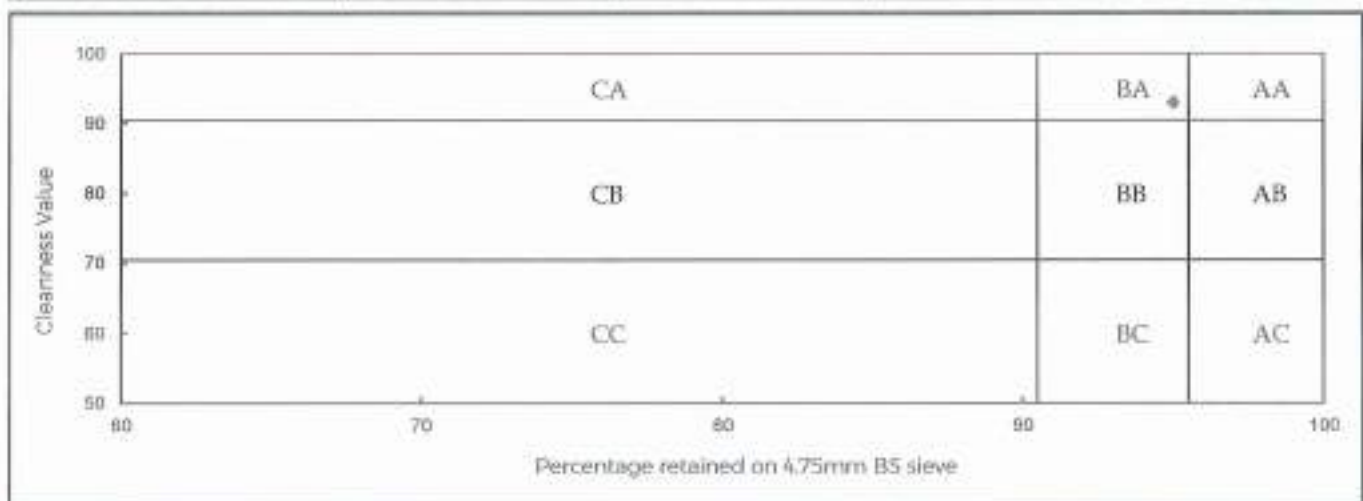
Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : J Tarawa (WSP Hamilton Lab)
 Date sampled : 27/09/21
 Sampling method : NZS 4407: 2015, 2.4.6.3.2
 Sample description : WHAP65
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7987/2_WQI
 Client Ref No : -

Test Results

Percentage Retained on 4.75mm BS Sieve After 10 Cycles : 95
 Cleanness Value After 10 Cycles : 93
 Weathering Quality Index (see table below) : BA

Cleanness Value	Percentage Retained on 4.75mm Sieve			Specified
	96 - 100	91 - 95	up to 90	
91 - 100	AA	BA	CA	AA, AB, AC BA, BB, CA
71 - 90	AB	BB	CB	
up to 70	AC	BC	CC	



Test Method	Notes
Weathering Quality Index, NZS 4407:2015, Test 3.1)	* Is graphed value of Weathering Quality Index. Specification from Hamilton City Development Manual Aug 2009.

Date tested : 8/11/2021
 Date reported : 10/11/21

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Designation : Senior Civil Engineering Technician
 Date : 10/11/21



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PI-LAB-054 (11/07/2020)

Page 1 of 1

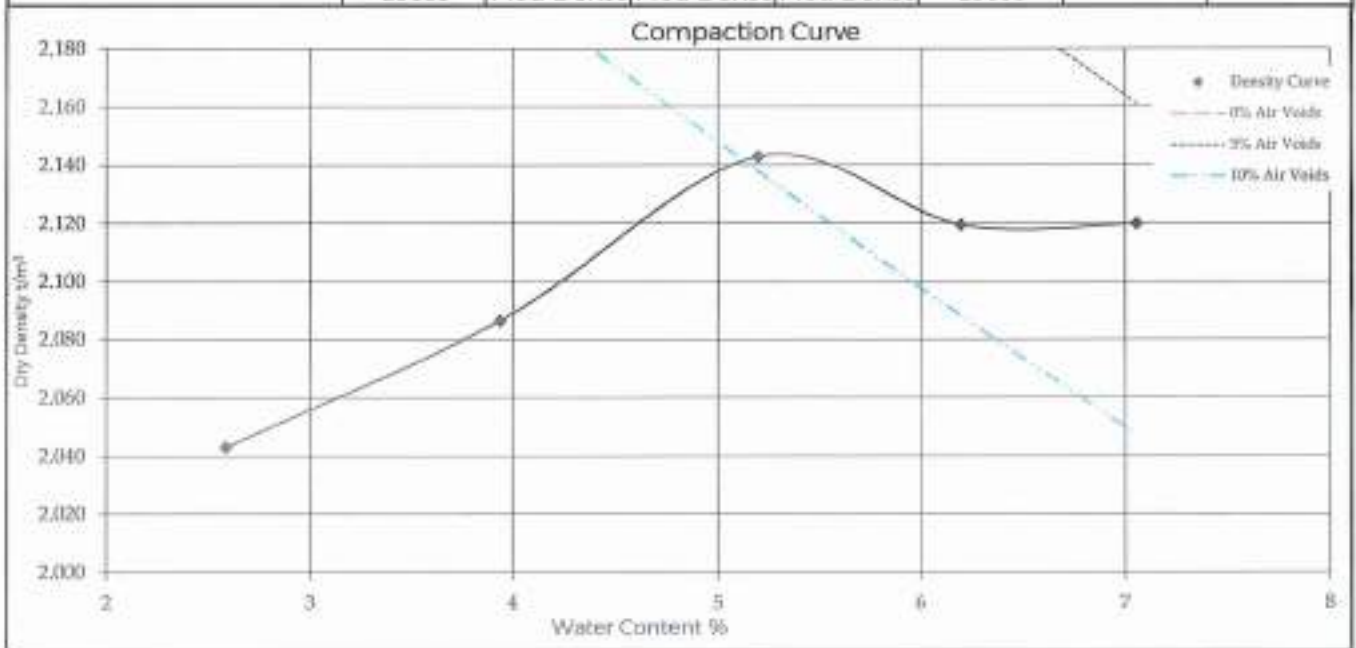
**DRY DENSITY / WATER CONTENT RELATIONSHIP
VIBRATING COMPACTION**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : J.Tarawa (WSP Hamilton Lab)
 Date sampled : 27/09/21
 Sampling method : NZS4407:2015,2.4.6.3.2
 Sample description : WHAP65
 Sample condition : Moist
 Solid density : 2.71 t/m³ (Tested)
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7987/2_VHMDD
 Client Ref No : -

Test Results						
Maximum dry density	2.14	t/m ³	Natural water content	2.6	%	
Optimum water content	5	%	Fraction tested	<37.5mm		
Sample ID	Nat	60	120	180	240	
Bulk density	t/m ³	2.096	2.169	2.254	2.251	2.270
Water content	%	2.6	3.9	5.2	6.2	7.1
Dry density	t/m ³	2.043	2.087	2.143	2.119	2.120
Sample condition	Moist	Wet	Wet	Wet	Saturated	
	Loose	Med Dense	Med Dense	Med Dense	Loose	



Test Methods	Notes
Compaction NZS 4402 : 1986 : Test 4.13	Solid Density from report HA7987/2_SD

Date tested : 28/10/21
 Date reported : 03/11/21

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Designation : Senior Civil Engineering Technician
 Date : 03/11/21



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**SOLID DENSITY OF AGGREGATE PARTICLES
TEST REPORT**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : J.Tarawa (WSP Hamilton Lab)
 Date sampled : 27/09/21
 Sampling method : NZS 4407:2015 Method 2.4.6.3.2
 Sample description : WHAP65
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7987/2_SD
 Client Ref No :

Test Results

Fraction Tested : Retained 4.75mm sieve

	Coarse	Fine	Composite
Solid Density (t/m ³) :	2.71		

Test Method	Notes
NZS 4407 : 2015 test 3.7.2 - Immersion method for coarse aggregate	

Date tested : 20/10/21
 Date reported : 03/11/21

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Designation : Senior Civil Engineering Technician
 Date : 03/11/21



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 accreditation

WHAP 65
TEST REPORT



Project: Quality Assurance
 Location: Stockpile
 Client: Online Contractors (2016) Limited
 Contractor: -
 Sampled by: J.Tarawa (WSP Hamilton Lab)
 Date sampled: 27/09/21
 Sampling method: NZS 4407: 2015, 2.4.6.3.2
 Sample description: WHAP65
 Sample condition: Moist
 Source: Tauhel Quarry

Project No: 2-68015.00
 Lab Ref No: HA7987/2_SA
 Client Ref No: -

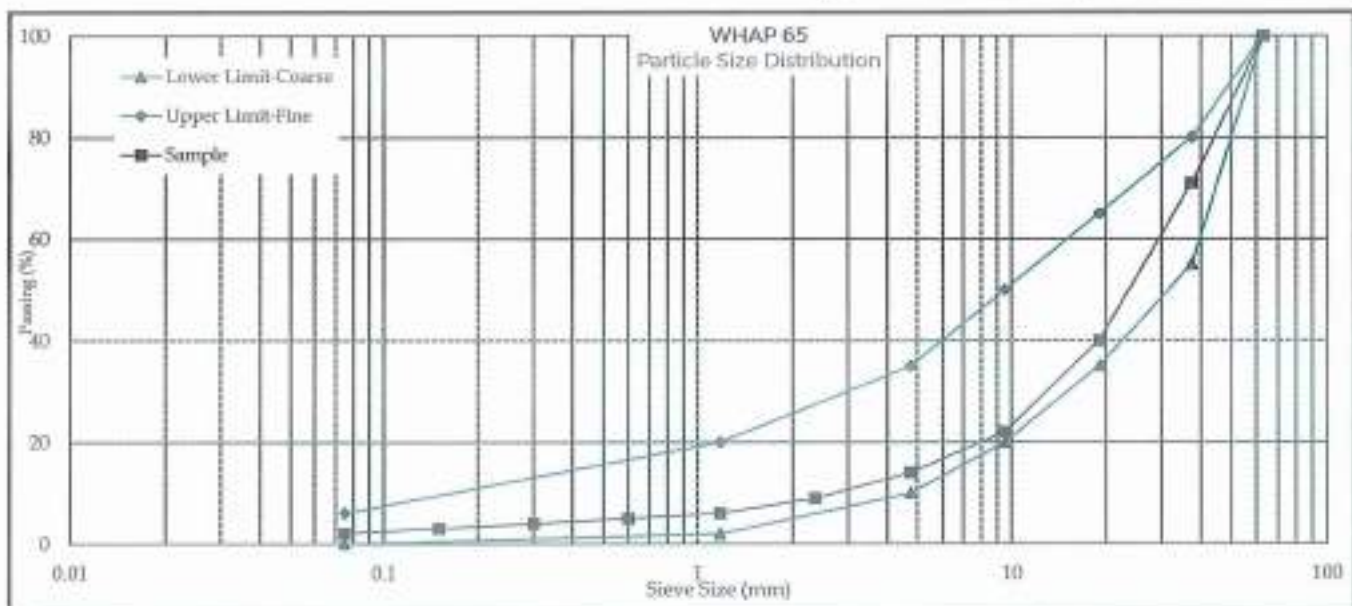
Particle Size Distribution			
Sieve Size (mm)	Percentage Passing		
	Sample	Lower Limit	Upper Limit
63.0	100	100	100
37.5	71	55	80
19.0	40	35	65
9.5	22	20	50
4.75	14	10	35
2.36	9	-	-
1.18	6	2	20
0.600	5	-	-
0.300	4	-	-
0.150	3	-	-
0.075	2	0	6

% passing the finest sieve is obtained by difference

Crushing Resistance		
% Fines Spec. Load	3A	9%
Specification	<10	9%
Crushing Resistance	>130	kN
Nom Aggregate Size	13.2 - 9.5	mm
Specified Load	130	kN

Broken Faces Content of Aggregate		
Fraction (mm)	Percentage by Weight	
	Sample	Lower Limit
63.0 - 37.5	-	50
37.5 - 19.0	-	50
19.0 - 9.5	-	50
9.5 - 4.75	-	50

Sand Equivalent (Washed, Mechanical Shaking)	
Sample SE	81
Specified	>= 25



Test Methods		
Particle Size Distribution	NZS 4407: 2015: Test 3.8.1	
Sand Equivalent	NZS 4407: 2015: Test 3.6	
Crushing Resistance	NZS 4407: 2015: Test 3.10	Grading envelope from Hamilton City Development manual (2009)

Date tested: 19/10-03/11/21
 Date reported: 4/11/21
 Sampling is covered by IANZ Accreditation
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IANZ Approved Signatory

Designation: Senior Civil Engineering Technician
 Date: 4/11/21



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Barry Pearson

From: Martyn Smith <Martyn.Smith@hcc.govt.nz>
Sent: Monday, 27 September 2021 12:05 PM
To: Barry Pearson
Cc: Daniel Manning; Murray Giles
Subject: RE: Document issue No 108 - WHAP 65 vs GAP 65 aggregate
Attachments: Greenhill Park Subbase aggregate-10-WHAP 65 report.pdf

Hi Barry,

We have reviewed that attached document and can accept the WHAP 65 in this instance only. In future stages please source a complying GAP 65.

This is based on the pavement below:

- 150mm TN2 M/4 AP40
- 200mm Subbase (Proposed WHAP 65 v GAP 65)
- founded on the 500mm BBR CBR>15 layer.

Regards,

Martyn Smith

Development Engineer | Strategic Development Unit

DDI: 07 838 6877 | Email: martyn.smith@hcc.govt.nz



Hamilton City Council | Private Bag 3010 | Hamilton 3240 | www.hamilton.govt.nz

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From: Martyn Smith
Sent: Friday, 24 September 2021 7:39 pm
To: Murray Giles <Murray.Giles1@hcc.govt.nz>
Cc: Daniel Manning <Daniel.Manning@hcc.govt.nz>
Subject: FW: Document issue No 108 - WHAP 65 vs GAP 65 aggregate

Hi Murray, (Daniel - is the pavement I describe below, correct?)

As discussed, do you think this material is suitable as subbase on the collector/bus route?

I believe the pavement design is:

APPENDIX 2(c)

Roading QA Documentation

Road Basecourse

- Nuclear Densometer Results
- Benkelman Beam Test Results
- Basecourse Strings
- TNZ M/4 AP40 Material Tests



**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill - Stage 16
 Location : Road 1
 Client : Online Contractors (2016) Limited
 Contractor : Online Contractors (2016) Limited
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : J. Waru-Savage, C. Robertson

Project No : 2-68015.00
 Lab Ref No : HAB479
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left WT	Right WT		
20	0.74			
30		0.88		
40	0.90			
50		0.96		
60	0.98			
70		0.74		
80	0.82			
90		0.78		
100	0.92			
110		0.86		
120	1.08			
	0.98			90 Percentile calculated for all data in columns 1 to 2

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 1.08	Minimum (mm): 0.74	Average (mm): 0.88
--------------------	--------------------	--------------------

Note: Results in *italics* have a difference between intermediate and final readings that are greater than 5 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 21/01/2022
 Date reported : 21/01/2022

IANZ Approved Signatory 
 Designation : Senior Civil Engineering Technician
 Date : 21/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project : Greenhill - Stage 16
Location : Road 1
Client : Online Contractors (2016) Limited
Contractor : Online Contractors (2016) Limited
Tested by : J. Wanu-Savage, C. Robertson
Date tested : 21/01/22

Sample description : TNZ M/A AP40 (ex Tauhei Quarry)
Nuclear densometer no : 62431
Solid density (tested) : 2.75 t/m³
Max dry density (tested) : 2.30 t/m³
Opt water content (tested) : 5.0 %

Project No : 2-68015.00
Lab Ref No : HA8479_NDM
Client Ref No :

Nuclear Densometer Test Results											
Test Number	1	2	3	4	5	6	7	8	9	10	11
Test Position	CH20	CH30	CH40	CH50	CH60	CH70	CH80	CH90	CH100	CH110	CH120
Offset	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S
Wet Density (t/m ³)	2.37	2.39	2.44	2.35	2.44	2.37	2.36	2.35	2.44	2.32	2.26
Dry Density (t/m ³)	2.28	2.29	2.35	2.25	2.34	2.28	2.27	2.25	2.35	2.21	2.18
Water Content (%)	3.7	4.2	4.1	4.5	4.0	3.9	4.1	4.4	4.1	4.7	3.9
% of MDD	99	100	102	98	102	99	99	98	102	98	95
% Saturation	50	58	65	56	64	52	53	55	65	53	41

Oven Corrected Test Results

Dry Density (t/m ³)											
Water Content (%)											
% of MDD											
% Saturation											

Test Methods
 Moisture Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode
 MDD and Solid Density from WSP, Hamilton Lab - Report No HA7753_VHMDD (September 2020)

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IANZ Approved Signatory
 Designation : Senior Civil Engineering Technician
 Date : 21/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project : Greenhill - Stage 16
Location : Road 3
Client : Online Contractors (2016) Limited
Contractor : Online Contractors (2016) Limited
Tested by : J Waru-Savage, C. Robertson
Date tested : 18/01/22

Sample description : TNZ M/4 AP40 (ex Tauhei Quarry)
Nuclear densometer no : 33576
Solid density (tested) : 2.75 t/m^3
Max dry density (tested) : 2.30 t/m^3
Opt water content (tested) : 5.0 %

Project No : 2-68015.00
Lab Ref No : HA8456a_NDM
Client Ref No :

		Nuclear Densometer Test Results											
Test Number	Test Position	15	16	17	18	19	20	21	22	23	24		
Offset	CH10D	CH90	CH80	CH70	CH60	CH50	CH40	CH30	CH20	CH10			
Probe Depth (mm)	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT			
Wet Density (t/m^3)	2.36	2.37	2.39	2.30	2.36	2.29	2.36	2.29	2.30	2.34			
Dry Density (t/m^3)	2.30	2.31	2.32	2.23	2.29	2.23	2.28	2.22	2.25	2.28			
Water Content (%)	2.6	2.6	2.9	3.1	2.7	2.6	3.2	3.0	2.8	2.5			
% of MDD	100	101	101	97	100	97	99	97	97	99			
% Saturation	36	38	43	36	37	31	43	35	33	34			

Oven Corrected Test Results

Dry Density (t/m^3)													
Water Content (%)													
% Saturation													

Test Methods

Insta Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode

Notes
 MDD and Solid Density from WSP, Hamilton Lab - Report No. "HA7753_VHIMDD" (September 2021)

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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

PR-VAL-057 (18/07/2020)

BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project: Greenhill - Stage 16
Location: Road 2
Client: Online Contractors (2016) Limited
Contractor: Online Contractors (2016) Limited
Tested by: J. Waru-Savage, C. Robertson
Date tested: 18/01/22

Sample description: TNZ M/4 AP40 (ex Tauhei Quarry)
Nuclear densometer no: 33576
Solid density (tested): 2.75 t/m^3
Max dry density (tested): 2.30 t/m^3
Opt water content (tested): 5.0 %

Project No: 2-68015.00
Lab Ref No: HA9456b_NDM
Client Ref No:

Nuclear Densometer Test Results														
Test Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Test Position	CH10	CH20	CH30	CH40	CH50	CH60	CH70	CH80	CH90	CH100	CH110	CH120	CH130	CH140
Offset	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S
Wet Density (t/m^3)	2.31	2.37	2.33	2.31	2.37	2.31	2.29	2.26	2.30	2.31	2.33	2.35	2.32	2.32
Dry Density (t/m^3)	2.24	2.29	2.27	2.24	2.30	2.25	2.22	2.20	2.24	2.24	2.27	2.29	2.25	2.24
Water Content (%)	3.3	3.1	2.6	2.9	2.9	2.6	3.4	2.8	2.6	2.8	2.6	2.7	4.1	3.3
% of MDD	97	100	99	97	100	98	96	96	97	98	99	100	97	98
% Saturation	39	45	34	35	41	33	39	31	32	34	34	37	48	40

Oven Corrected Test Results

Dry Density (t/m^3)														
Water Content (%)														
% Saturation														

Test Methods

Insta Density : NZS 4407:2015, Test 4.3 for Backscatter Mode

Notes

MDD and Solid Density from WSP, Hamilton Lab - Report No: 'HA7753_VHIMDD' (September 2021)

NOT TESTED

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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Date reported : 18/01/22

SP-048-037 (11/07/2020)

BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project : Greenhill - Stage 16
Location : Road 4
Client : Online Contractors (2016) Limited
Contractor : Online Contractors (2016) Limited
Tested by : J. Waru-Savage, C. Robertson
Date tested : 18/01/22

Sample description : TNZ M/4 AP40 (ex Tauhei Quarry)
Nuclear densometer no : 33576
Solid density (tested) : 2.75 t/m³
Max dry density (tested) : 2.30 t/m³
Opt. water content (tested) : 5.0 %

Project No : 2-688015-00
Lab Ref No : HA8456c_NDM
Client Ref No :

Nuclear Densometer Test Results														
Test Number	1	2	3	4	5	6	7	8	9	10	11	12	13	15
Test Position	CH280	CH270	CH260	CH250	CH240	CH250	CH220	CH210	CH200	CH190	CH180	CH170	CH180	
Offset	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	
Probe Depth (mm)	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	B/5	
Wet Density (t/m ³)	2.37	2.33	2.25	2.32	2.29	2.36	2.29	2.34	2.32	2.26	2.30	2.32	2.27	
Dry Density (t/m ³)	2.31	2.26	2.18	2.25	2.22	2.29	2.22	2.26	2.26	2.19	2.23	2.24	2.20	
Water Content (%)	2.8	2.8	2.9	3.0	3.2	3.1	3.4	3.4	2.8	3.3	3.2	3.7	3.0	
% of MDD	100	98	95	98	96	100	98	98	98	95	97	97	96	
% Saturation	40	36	31	37	37	43	43	43	35	35	38	45	33	

Oven Corrected Test Results

Test Method	Notes
Instru Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode	MDD and Solid Density from WSP Hamilton Lab - Report No: 'HA7753_VHMDD' (September 2021)
Dry Density (t/m ³)	NOT TESTED
Water Content (%)	
% of MDD	
% Saturation	

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
Date : 18/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

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Date reported : 18/01/22

WSP

Hamilton (Fox St)
 Quality Management Systems Certified to ISO 9001

4 Fox Street
 Private Bag 5057, Waikato Mail Centre, 3240,
 Hamilton, New Zealand

Telephone +64 7 856 2870
 Website www.wsp.com.nz

BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS



Project: Greenhill - Stage 16
Location: Road 2a
Client: Online Contractors (2016) Limited
Contractor: Online Contractors (2016) Limited
Tested by: J. Waru-Savage, C. Robertson
Date tested: 18/01/22

Sample description: TNZ M/4 AP40 (ex Tauhei Quarry)
Nuclear densometer no: 33576
Solid density (tested): 2.75 t/m³
Max dry density (tested): 2.30 t/m³
Opt water content (tested): 5.0 %

Project No: 2-58015.00
Lab Ref No: HA8456d_NDM
Client Ref No:

Nuclear Densometer Test Results									
Test Number	1	2	3	4	5				
Test Position	CH20	CH30	CH40	CH50	CH60				
Offset	LWT	RWT	LWT	RWT	LWT				
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S				
Wet Density (t/m ³)	2.32	2.26	2.33	2.35	2.30				
Dry Density (t/m ³)	2.25	2.20	2.27	2.28	2.23				
Water Content (%)	3.0	2.9	2.8	2.9	3.1				
% of MDD	98	95	99	99	97				
% Saturation	37	32	36	39	36				

Oven Corrected Test Results									
Dry Density (t/m ³)									
Water Content (%)									
% of MDD									
% Saturation									

Test Methods: NZS 4407: 2015, Test 4.3 for Backscatter Mode
Notes: MDD and Solid Density from WSP, Hamilton Lab - Report No: 'HA7753_VHMDD' (September 2021)

This report may only be reproduced in full

IANZ Approved Signatory: 
Designation: Senior Civil Engineering Technician
Date: 18/01/22



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BASECOURSE COMPACTION CONTROL
TNZ - B2 TEST RESULTS**



Project : **Greenhill Park** Sample description : **TNZ M/4 AP40 ex Tauhei Quarry**
 Location : **Watkins Road** Nuclear densometer no : **33576**
 Client : **Online Contractors (2016) Ltd** Solid density (tested) : **2.75 t/m³**
 Contractor : **Online Contractors (2016) Ltd** Max dry density (tested) : **2.30 t/m³**
 Tested by : **C.Robertson, S.Cooke** Opt. water content (tested) : **5.0 %**
 Date tested : **02/03/22**

Project No : **2-68015.00**
 Lab Ref No : **HA8663_NDM**
 Client Ref No :

Nuclear Densometer Test Results													
Test Number	1	2	3	4	5								
Test Position	Ch30	Ch40	Ch50	Ch60	Ch70								
Offset	Left	Right	Left	Right	Left								
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S								
Wet Density (t/m³)	2.30	2.50	2.33	2.40	2.38								
Dry Density (t/m³)	2.23	2.42	2.24	2.29	2.28								
Water Content (%)	3.2	3.3	4.2	4.7	4.3								
% of MDD	97	105	97	99	99								
% Saturation	37	66	50	64	57								

Oven Corrected Test Results													
Dry Density (t/m³)													
Water Content (%)													
% of MDD													
% Saturation													

Test Methods	Notes
Insitu Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode	Max dry density & Solid density from : WSP Hamilton Lab, Report ID: HA7753_VHMDD (September 2021).

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IANZ Approved Signatory

Date reported : **02/03/22** Designation : **Senior Civil Engineering Technician**
 Date : **02/03/22**



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 3
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle: 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456a
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left WT	Right WT		
240	0.58			* Concrete table.
230		0.60		
220	0.60			
210		0.62		
200	0.74			
190		1.10		
180				
170				
160	0.40			
150		0.22		
140	0.44			
130		0.44		
120	0.46			
110		0.28		
100	0.60			
90		0.48		
80	0.48			
70		0.26		
60	0.44			
50		0.58		
40	0.50			
30		0.54		
20	0.60			
10		0.30		
	0.62			90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 1.10	Minimum (mm) : 0.22	Average (mm): 0.50
--------------------	---------------------	--------------------

Note: Results in *italics* have a difference between Intermediate and Final readings that are greater than 5 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 2
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456b
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Lift WT	Right WT		
10		0.52		
20	0.60			
30		0.76		
40	0.52			
50		0.84		
60	0.48			
70		0.74		
80	0.54			
90		0.64		
100	0.48			
110		0.70		
120	0.50			
130		0.52		
140	0.36			
		0.75	90 Percentile calculated for all data in columns 1 to 2.	

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.84	Minimum (mm): 0.36	Average (mm): 0.59
--------------------	--------------------	--------------------

Note: Results in *italics* have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 4
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HAB456c
 Client Ref :

Test Results					
Location Metres	Deflections (mm)			Comments	
	Left WT	Right WT			
280	0.44			* Concrete table.	
270		0.48			
260	0.42				
250		0.54			
240	0.44				
230		0.48			
220	*				
210		0.88			
200	0.74				
190		0.80			
180	1.04				
170		1.02			
160	1.36				
	1.04				90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 1.36 Minimum (mm): 0.42 Average (mm): 0.72

Note: Results in italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/1 1977)

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 2a
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456d
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left WT	Right WT		
20	0.80			
30		0.66		
40	0.60			
50		0.56		
60	0.64			
	0.74			90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.80	Minimum (mm) : 0.56	Average (mm): 0.65
--------------------	---------------------	--------------------

Note: Results in Italics have a difference between Intermediate and Final readings that are greater than 5 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 3
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle: 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456a
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left WT	Right WT		
240	0.58			* Concrete table.
230		0.60		
220	0.60			
210		0.62		
200	0.74			
190		1.10		
180				
170				
160	0.40			
150		0.22		
140	0.44			
130		0.44		
120	0.46			
110		0.28		
100	0.60			
90		0.48		
80	0.48			
70		0.26		
60	0.44			
50		0.58		
40	0.50			
30		0.54		
20	0.60			
10		0.30		
	0.62			90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 1.10	Minimum (mm) : 0.22	Average (mm): 0.50
--------------------	---------------------	--------------------

Note: Results in *italics* have a difference between Intermediate and Final readings that are greater than 5 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 2
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456b
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Lift WT	Right WT		
10		0.52		
20	0.60			
30		0.76		
40	0.52			
50		0.84		
60	0.48			
70		0.74		
80	0.54			
90		0.64		
100	0.48			
110		0.70		
120	0.50			
130		0.52		
140	0.36			
		0.75	90 Percentile calculated for all data in columns 1 to 2.	

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.84	Minimum (mm): 0.36	Average (mm): 0.59
--------------------	--------------------	--------------------

Note: Results in *italics* have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 4
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HAB456c
 Client Ref :

Test Results					
Location Metres	Deflections (mm)			Comments	
	Left WT	Right WT			
280	0.44			* Concrete table.	
270		0.48			
260	0.42				
250		0.54			
240	0.44				
230		0.48			
220	*				
210		0.88			
200	0.74				
190		0.80			
180	1.04				
170		1.02			
160	1.36				
	1.04				90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 1.36 Minimum (mm): 0.42 Average (mm): 0.72

Note: Results in italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/1 1977)

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill- Stage 16
 Location : Road 2a
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle : 8.3 tonnes
 Tested by : C.Robertson, J. Waru-Savage

Project No : 2-68015.00
 Lab Ref No : HA8456d
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left WT	Right WT		
20	0.80			
30		0.66		
40	0.60			
50		0.56		
60	0.64			
	0.74		90 Percentile calculated for all data in columns 1 to 2.	

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.80	Minimum (mm) : 0.56	Average (mm): 0.65
--------------------	---------------------	--------------------

Note: Results in Italics have a difference between Intermediate and Final readings that are greater than 5 (refer TNZ T/1 1977).

This report may only be reproduced in full

Date tested : 18/01/2022
 Date reported : 18/01/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 18/01/2022



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

**BENKELMAN BEAM
TEST REPORT**



Project : Greenhill Park
 Location : Watkins Road
 Client : Online Contractors (2016) Ltd
 Contractor : Online Contractors (2016) Ltd
 Test method : TNZ T/1 1977
 Pavement type : TNZ M/4 AP40
 Pavement temp °C : -
 Weight on rear axle: 8.3 tonnes
 Tested by : C.Robertson, S.Cooke

Project No : 2-68015.00
 Lab Ref No : HA8663_Beam
 Client Ref :

Test Results				
Location Metres	Deflections (mm)			Comments
	Left	Right		
30	1.06			Ch30 approx 1m in from seal edge, Watkins Rd
40		0.62		
50	0.68			
60		0.76		
70	0.48			
	0.94			90 Percentile calculated for all data in columns 1 to 2.

Deflection Statistical Analysis (for all deflections)

Maximum (mm): **1.06** Minimum (mm) : **0.48** Average (mm): **0.72**

Note: Results in italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/1 1977).

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Date tested : 2/03/2022
 Date reported : 2/03/2022

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 2/03/2022



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COMPACTION - CLEGG TESTS

Contract	Stage 16 Ghp	Job No.	
Site/Chainage	Road 3	Date	20/01/2022
Material	Tnz40	Recorded by	Jordan Allen

Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes
10	42			
20		46		
30			51	
40	60			
50		63		
60			69	
70	54			
80		58		
90			49	
100	57			
110		48		
120			36	
130	39			
140		47		
150			52	
160	50			
170		43		
180			51	
190	63			
200		65		
210			60	
220	58			
230		56		

Source of conversion: $Inferred\ CBR\% = 0.07(Impact\ Value)^2 / 100$

Remarks _____

**CRUSHING RESISTANCE OF COARSE AGGREGATE
TEST REPORT**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Ltd
 Contractor : -
 Sampled by : C.Robertson (WSP)
 Date sampled : 10/08/21
 Sampling method : NZS4407:2015 2.4.6.3.2
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Source : Tauhei Quarry

Project No: 2-68015.00
 Lab Ref No: HA7753_CR
 Client Ref No:

Test Results

Nominal size of aggregate (mm):	13.2-9.5
Specified load (kN):	130
Percentage of fines (passing 2.36 mm) achieved at specified load :	4.8
Crushing resistance to produce 10% fines greater or less than specified load :	Greater than specified load

Test Methods

NZS 4407: 2015, Test 3.10

Date tested : 16/08/21
 Date reported : 21/09/21

Sampling is covered by IANZ Accreditation
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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 21/09/21



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-046 (11/07/2020)

TNZ M/4 : 2006 AP40
TEST REPORT



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C. Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS4407:2015, 2.4.6.3.2
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7753_SA
 Client Ref No : -

Particle Size Distribution		
Sieve Size (mm)	Percentage Passing	
	Sample	Limits
63.0	-	100 - 100
37.5	100	100 - 100
19.0	74	66 - 81
9.5	49	43 - 57
4.75	34	28 - 43
2.36	22	19 - 33
1.18	14	12 - 25
0.600	9	7 - 19
0.300	7	3 - 14
0.150	5	0 - 10
0.075	4	0 - 7

% passing the finest sieve is obtained by difference

Grading Shape Control		
Fraction (mm)	% Within Fraction	
	Sample	Limits
19.0 - 4.75	40	28 - 48
9.5 - 2.36	27	14 - 34
4.75 - 1.18	20	7 - 27
2.36 - 0.600	13	6 - 22
1.18 - 0.300	7	5 - 19
0.600 - 0.150	4	2 - 14

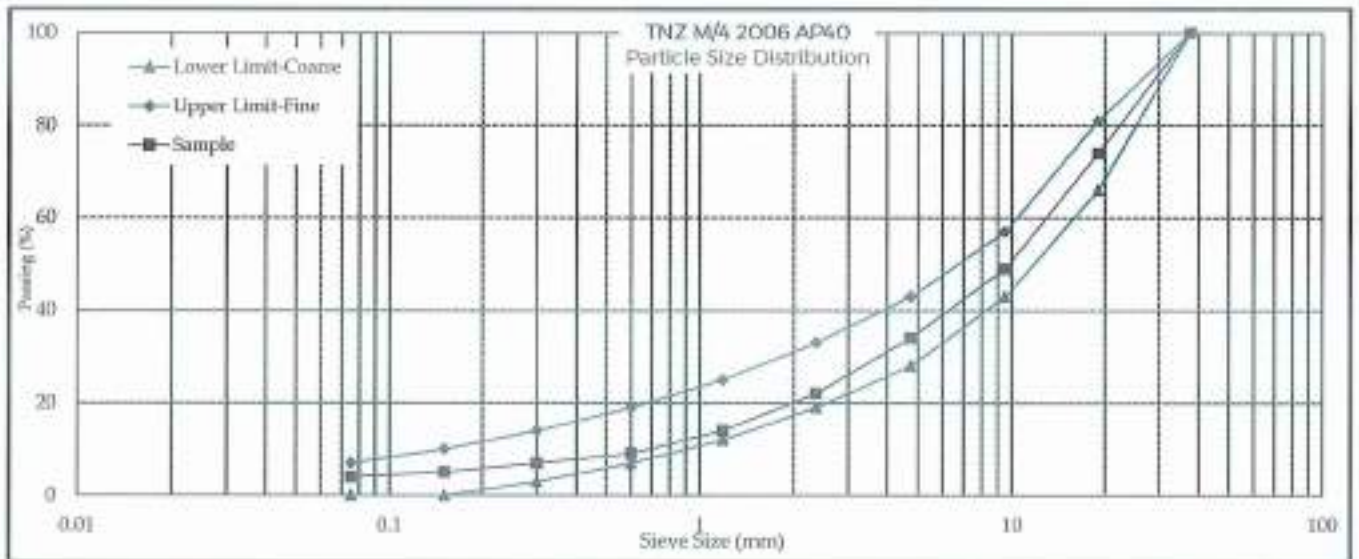
Crushing Resistance		
% Fines @ Spec. Load	-	%
Specification	-	%
Crushing Resistance	-	kN
Nom Aggregate Size	-	mm
Specified Load	-	kN

Broken Faces Content of Aggregate		
Fraction (mm)	Percentage by Weight	
	Sample	Lower Limit
37.5 - 19.0	-	70
19.0 - 9.5	-	70
9.5 - 4.75	-	70

Plasticity Index	
Sample PI	-
Specification	≤ 5

Clay Index	
Sample CI	-
Specification	≤ 3

Sand Equivalent (Washed, Mechanical Shaking)	
Sample SE	-
Specified	≥ 40



Test Methods	
Particle Size Distribution	NZS 4407 : 2015 : Test 3.8.1

Date tested : 13/08/21
 Date reported : 13/08/21
 Sampling is covered by IANZ Accreditation
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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 13/08/21



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PE-LAB-040 (10/07/2020)

Page 1 of 1

**SOLID DENSITY OF AGGREGATE PARTICLES
TEST REPORT**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C. Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS 4407:2015 Method 2.4.8.3
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7753_5D
 Client Ref No : -

Test Results

Fraction Tested : Retained 4.75mm sieve

	Coarse	Fine	Composite
Solid Density (t/m ³) :	2.75		

Test Method	Notes
NZS 4407 : 2015 test 3.7.2 - Immersion method for coarse aggregate	

Date tested : 21/09/21
 Date reported : 21/09/21

Sampling is covered by IANZ Accreditation
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Designation : Senior Civil Engineering Technician
 Date : 21/09/21



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SAND EQUIVALENT
TEST REPORT



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C. Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS4407:2015, 2.4.6.3.2
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7753_SE
 Client Ref No : -

Test Results	
Client Ref. No	-
Sand Equivalent :	47
Method of shaking :	Mechanical
Method of preparation :	Washed

Test Method
NZS 4407 : 2015, Test 3.6

Date tested : 21/09/21 Sampling is covered by IANZ Accreditation
 Date reported : 21/09/21 This report may only be reproduced in full

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Designation : Senior Civil Engineering Technician
 Date : 21/09/21



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PF-LAB-048 (11/07/2020)

**CALIFORNIA BEARING RATIO (REMOULDED)
TEST REPORT**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C. Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS 4407:2015 Method 2.4.6.3.2
 Sample description : See below
 Sample source : Stockpile

Project No : 2-68015.00
 Lab Ref No : HA7753_VCBR
 Client Ref No : -

Test Results

Lab Ref No. :		HA7753_VCBR
Client Ref No. :		-
Sample source :		Stockpile
Sample origin :		Tauhei Quarry
Sample description :		TNZ M/4 AP40
Sample condition at compaction :		As received
Sample condition as tested :		Soaked
Curing time :	days	-
Soaking time :	days	4
Passing 19mm :	%	74
Surcharge mass :	kg	4
Lime additive :	%	-
Cement additive :	%	-
Swell :	%	0
Water content as received :	%	4.8
Water content as compacted :	%	4.6
Water content after testing :	%	6
Dry Density :	t/m ³	2.06
Penetration of CBR :	mm	5
CBR value :	%	155

Test Methods	Notes
CBR NZS : 4407 : 2015 : 5.15	Material Used
Water Content NZS : 4407 : 2015 : 3.1	Rate of penetration
Compaction NZS : 4402 : 1986 : 4.1.3 (Vibratory)	Passing 19mm sieve 1mm/min

Date tested : 10/09/21
 Date reported : 21/09/21

Sampling is covered by IANZ Accreditation
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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 21/09/21



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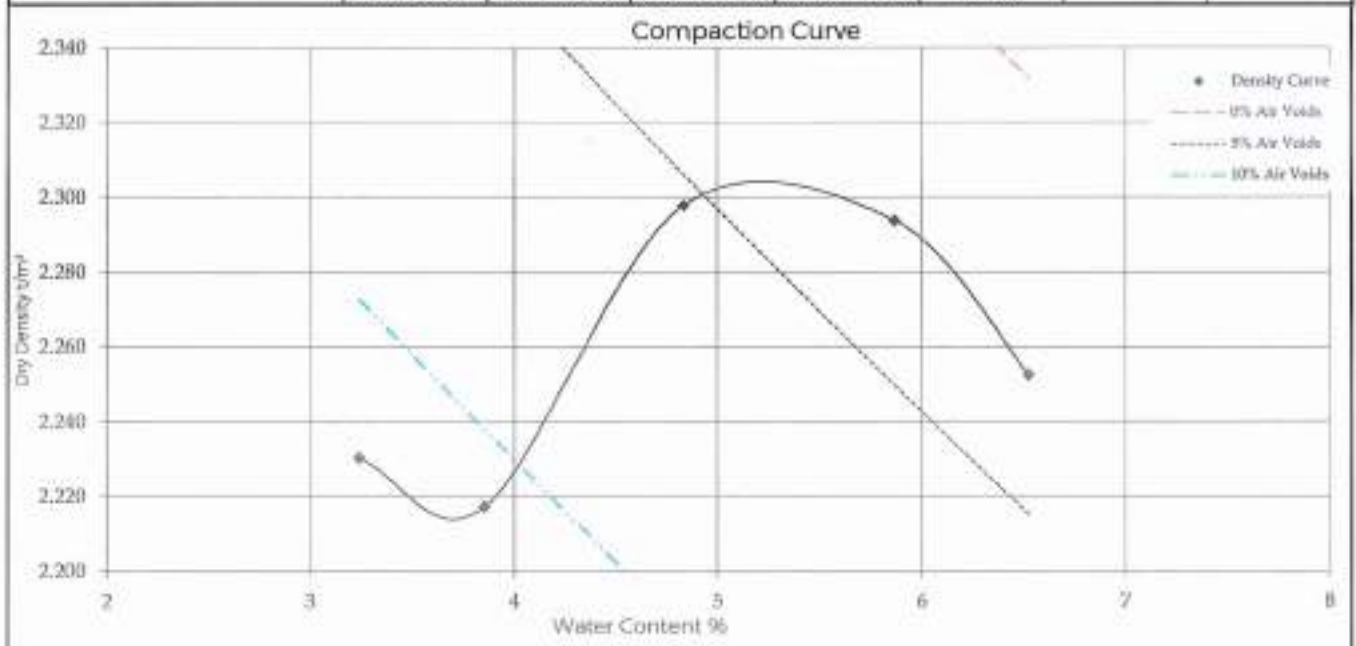
**DRY DENSITY / WATER CONTENT RELATIONSHIP
VIBRATING COMPACTION**



Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C.Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS 4407:2015,2.4.6.3.2
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Solid density : 2.75 t/m³ (Tested)
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7753_VHMDD
 Client Ref No : -

Test Results							
Maximum dry density	2.30	t/m ³	Natural water content		3.9	%	
Optimum water content	5	%	Fraction tested		<37.5	mm	
Sample ID	-60	Nat	60	120	180		
Bulk density	t/m ³	2.303	2.303	2.409	2.428	2.399	
Water content	%	3.2	3.9	4.8	5.9	6.5	
Dry density	t/m ³	2.230	2.217	2.298	2.294	2.252	
Sample condition	Moist	Moist	Wet	Wet	Saturated		
	Med Dense	Med Dense	Med Dense	Med Dense	Loose		



Test Methods	Notes
Compaction NZS 4402:1986: Test 4.1.3	Solid density from report HA7753_50

Date tested : 16/08/21
 Date reported : 21/09/21

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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 21/09/21



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PF-LAB-027 (01/07/20)

Page 1 of 1

**WEATHERING QUALITY OF COARSE AGGREGATE
TEST REPORT**



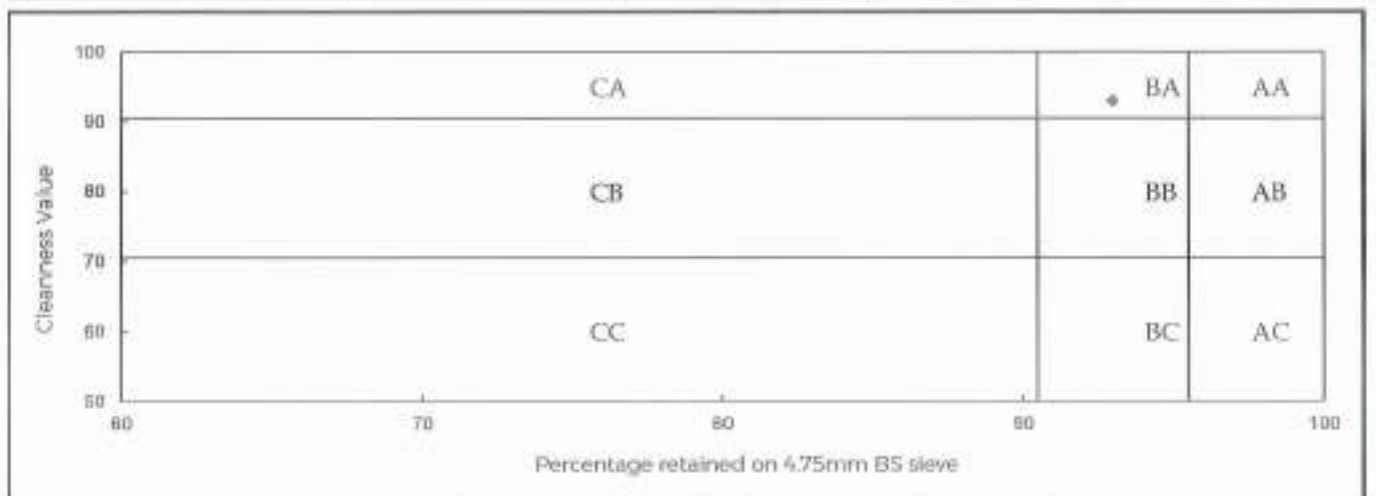
Project : Quality Assurance
 Location : Stockpile
 Client : Online Contractors (2016) Limited
 Contractor : -
 Sampled by : C Robertson (WSP Hamilton Lab)
 Date sampled : 10/08/21
 Sampling method : NZS 4407:2015:2.4.6.3.2
 Sample description : TNZ M/4 AP40
 Sample condition : Moist
 Source : Tauhei Quarry

Project No : 2-68015.00
 Lab Ref No : HA7753_WQJ
 Client Ref No : -

Test Results

Percentage Retained on 4.75mm BS Sieve After 10 Cycles : 93
 Cleanness Value After 10 Cycles : 93
 Weathering Quality Index (see table below) : BA

Cleanness Value	Percentage Retained on 4.75mm Sieve			Specified
	96 - 100	91 - 95	up to 90	
91 - 100	AA	BA	CA	TNZ M/4 2006 AA, AB, AC, BA, BB, CA
71 - 90	AB	BB	CB	
up to 70	AC	BC	CC	



Test Method	Notes
Weathering Quality Index, NZS 4407:2015, Test 3.11	◆ Is graphed value of Weathering Quality Index.

Date tested : 15/09/21
 Date reported : 21/09/21

Sampling is covered by IANZ Accreditation
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IANZ Approved Signatory

Designation : Senior Civil Engineering Technician
 Date : 21/09/21



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 accreditation

APPENDIX 2(d)

Roading QA Documentation

Surfacing & RAMM Data

- HCC pavement RAMM data
- Surfacing RAMM data



F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision GREENHILL PARK - STAGE 16
 Road No / Name ROAD ZA EARP CRESCENT
 Start m 20m Start Description CHILMAN TERRACE
 End m 50m End Description SPEED TABLE
 Width 5.5m (kerb face to vertical nib face)

Basecourse

Date Completed 20-1-2022
 Thickness 230mm
 Grading TN2 M/4 AP40
 Quarry TAUHEI

Sub-Base

Date Completed NIL
 Thickness _____
 Grading _____
 Quarry _____

Undercut / Imported Subgrade (If Required)

Whole Site Yes / No
 Length 50m
 Width 6.5m
 Depth 0.5m
 Backfill Material BLUE/BROWN ROCK

Subgrade

CBR Without 15
 Stabilisation _____

Material

Stabilised? No / Cement / Lime
 % Stabilising Agent _____
 Stabilised Depth _____
 Stabilised CBR _____

F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision GREENHILL PARK - STAGE 16
 Road No / Name ROAD 2 EARP CRESCENT
 Start 10m Start Description SPEED TABLE ROAD 2A INT.
 End 130 End Description SPEED TABLE ROAD 4 INT.
 Width 5.5m (Kerb face to face of vertical curb.)

Basecourse

Date Completed 20-1-2022
 Thickness 230mm
 Grading TN2 1/4 APAO
 Quarry TAUHEI

Sub-Base

Date Completed NIL
 Thickness _____
 Grading _____
 Quarry _____

Undercut / Imported Subgrade (If Required)

Whole Site Yes / No
 Length 130
 Width 6.5m
 Depth 0.5m
 Backfill Material BLUE/BROWN ROCK

Subgrade

CBR Without 15
 Stabilisation _____

Material

Stabilised? No / Cement / Lime
 % Stabilising Agent _____
 Stabilised Depth _____
 Stabilised CBR _____

F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision GREENHILL PARK - STAGE 16
 Road No. / Name ROAD 3 MUSSELWHITE TERRACE
 Start m 10m Start Description ROAD 2A SPEED TABLE
 End m 230m End Description ROAD 4 SPEED TABLE
 Width 5.5m. kerb face to kerb face

Basecourse

Date Completed 20-1-2022
 Thickness 230mm
 Grading TNZ N/A APA0
 Quarry TAHEI

Sub-Base _____
 Date Completed NIL
 Thickness _____
 Grading _____
 Quarry _____

Undercut / Imported Subgrade (if Required)

Who's Site Yes / No
 Length 220m
 Width 6.5m
 Depth 0.5m

Backfill Material BLUE/BROWN ROCK

Subgrade
 CBR Without 15
 Stabilisation _____

Material _____
 Stabilised? No / Cement / Lime

% Stabilising Agent _____
 Stabilised Depth _____
 Stabilised CBR _____

F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Sub-division GREENHILL PARK - STAGE 16
 Road No / Name ROAD 4 COGAR TERRACE
 Start m 160m Start Description 40° BEND LOT 512
 End m 270m End Description SPEED TABLE ROAD 3
 Width 6.5m (Kerb face to Kerb face)

Basecourse

Date Completed 20-1-2022
 Thickness 230mm
 Grading TN2 M/A AP40
 Quarry TAHHEI

Sub-Base _____
 Date Completed M/1
 Thickness _____
 Grading _____
 Quarry _____

Undercut / Imported Subgrade (If Required)

Whole Site Yes / No
 Length 110m
 Width 6.5m
 Depth 0.5m

Backfill Material BLUE/BROWN ROCK

Subgrade
 CRK Without _____
 Stabilisation 15.

Material _____
 Stabilised? No / Cement / Lime

% Stabilising Agent _____
 Stabilised Depth _____
 Stabilised CRK _____

F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision GREENHILL PARK - STAGE 16
 Road No / Name WATKINS ST
 Start m 10m Start Description Tie in Existing Street
 End m 70m End Description Speed table ROW 3
 Width 5.5m (Kerb face to Kerb face)

Basecourse

Date Completed 1-3-2022
 Thickness 230mm
 Grading TNZ M/4 AP40
 Quarry TAUHEI

Sub-Base

Date Completed NIL
 Thickness _____
 Grading _____
 Quarry _____

Undercut / Imported Subgrade (If Required)

Whole Site Yes No
 Length 60m
 Width 6.5m
 Depth 0.5m
 Backfill Material BLUE/BROWN ROCK

Subgrade

CBR Without
 Stabilisation 15

Material

Stabilised? No / Cement / Lime
 % Stabilising Agent _____
 Stabilised Depth _____
 Stabilised CBR _____

F3.8 RAMM CHIPSEAL DATA

(to be completed for each seal layer on each road section)

Subdivision	<u>Wyeorthill</u>	Start Description	<u>end of seal</u>
Road No / Name	<u>Stage 16</u>	End Description	<u>end of seal</u>
Start m	_____		
End m	_____		
Width	<u>5.1</u>		
Contractor	<u>Online Contractors 2016 Ltd</u>		
Date of Work	<u>28-01-22</u>		
Seal Type (circle one)	<u>1 Coat / Racked in Chipseal / 2 Coat / Other</u>		
Seal Reason	<u>Waterproofing First Coat / Second Coat <u>Asphalt Membrane</u></u>		
Area Sealed (m ²)	<u>2524 m²</u>		
Chip Grading (e.g. 3/5)	<u>VA membrane</u>		
Binder Type (e.g. B180/200)	<u>ERS-2 Emulsified.</u>		
Chip Source Company	<u>J. SUDAP</u>		
Chip Source Quarry	<u>Tatobrook.</u>		
Total Volume of Binder Used (Hot) (Litres)	<u>3533.6 l/m²</u>		
Temperature of Binder (°C)	<u>80°C.</u>		
Residual Binder Rate (L/m ²)	<u>1.0 l/m²</u>		
Cutter (e.g. 3 pph Kero)	<u>-</u>		
Other Additives with concentrations (e.g. Polymer modification RS1, 3%)	<u>-</u>		
Sealing Notes (e.g. Weather, Temp)	<u>Temperature was Fine.</u>		

Surfacing Chip PSV testing form attached

X

F3.7 RAMM ASPHALT DATA

(to be completed for each seal layer on each road section)

Subdivision Greenhill
 Road No / Name stage 16
 Start m _____ Start Description _____ end of seal
 End m _____ End Description end of seal
 Width 5.1

Contractor Online Contractors 2016 Ltd
 Date of Work 01/02/2022
 Asphalt Type (circle one) AC OGPA / SMA / Other
 Grading (e.g. M10 DG10) D07
 Area Surfaced (m²) 2524 m²
 Average thickness (mm) 34 mm
 Laying Temperature (°C) 14.2°C
 Tack Coat Residual Application Rate (L/m²) 1.02 membrane - Residual 1.02/m²
 Additional Notes (e.g. Weather, Temp, Polymer Modification) FINE

F3.7 RAMM ASPHALT DATA

(to be completed for each seal layer on each road section)

Subdivision Greenhill

Road No / Name Stage 16

Start m _____ Start Description end of seal

End m _____ End Description prior to roundabout

Width 7.5 m

Contractor Online Contractors 2016 Ltd

Date of Work 02-02-2022

Asphalt Type (circle one) AC OGPA / SMA / Other

Grading (e.g. M/10 DG10) D/110

Area Surfaced (m²) 814 m²

Average thickness (mm) 42 mm

Laying Temperature (°C) 14.2°C

Tack Coat Residual Application Rate (L/m²) 194 membrane - residual 1.0 L/m²

Additional Notes (e.g. Weather, Temp, Polymer Modification) Fine

F3.8 RAMM CHIPSEAL DATA

(to be completed for each seal layer on each road section)

Subdivision	GREENHILL		
Road No / Name	stage 1b		
Start m	Start Description	end of seal	
End m	primer to Roundabout		
Width	7.5 m		
Contractor	Online Contractors 2016 Ltd		
Date of Work	28-01-22		
Seal Type (circle one)	1 Coat / Racked in Chipseal / 2 Coat / Other.		
Seal Reason	Waterproofing First Coat / Second Coat <u>Asphalt Membrane</u>		
Area Sealed (m ²)	814 m ²		
Chip Grading (e.g. 3/5)	1/4 membrane.		
Binder Type (e.g. B180/200)	CRS-2 - Emulsion.		
Chip Source Company	J. SWAP.		
Chip Source Quarry	Tatogora.		
Total Volume of Binder Used (Hot) (Litres)	1139.6 l/m ² .		
Temperature of Binder (°C)	80°C		
Residual Binder Rate (L/m ²)	1.0 l/m ² .		
Cutter (e.g. 3 pph Kero)	-		
Other Additives with concentrations (e.g. Polymer modification RS1, 3%)	-		
Sealing Notes (e.g. Weather, Temp)	Temperature was fine		
Surfacing Chip PSV testing form attached	X		

APPENDIX 3

Water Construction QA Documentation

- Pipe Laying Checklists F6.2
- Final Inspection Checklist F6.3
- Laboratory Water Test Results
- Pressure Test Results



F6.2 WATER RETICULATION PIPE LAYING CHECKLIST

Site: GREENHILL PARK - STAGE 16		Developer: CHEDWORTH PROPERTIES			
Name of qualified water service person: TE RUKI SHEEHAN					
Location:	To RD1 525A	To RD2/2A	To RD4/3	To RD4/3	To RD3 517
	From CARRS	From RD1	From RD2/2A	From RD2/2A	From RD4/3

Pipe Laying Checks

Pipe size, quality, acceptable products checked. (attach photo of manufacturer's stamp on pipe)	250MM PN12.5 <input checked="" type="checkbox"/>	150MM PN12.5 <input checked="" type="checkbox"/>	150MM PN12.5 <input checked="" type="checkbox"/>	63MM PN12.5 <input checked="" type="checkbox"/>	63MM PN12.5 <input checked="" type="checkbox"/>
Foundation support in soft soil					
• Dynamic cone penetrometer (DCP) results available	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• if under-cutting required, note metreage and DCP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Valves and hydrants not in carriageway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment and cover	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and backfill material. (Attach DCP results for road crossings and driveways)	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>
All service connections in place. (Attach table of water meter and backflow preventor numbers with corresponding lot numbers.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connections and Toby Box correctly located horizontally and vertically (Dwg D6.6 & 6.7)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hydrants and valves positioned correctly (Dwg D6.1-6.3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thrust blocks installed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipelines flushed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken prior to backfill.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Bacto sample taken and passed by Council representative PRIOR to connection to the live Council main.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connection to live main by Council (unless specifically approved).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Main left charged at FAC level of _____ ppm					

[Handwritten Signature]

Developer/Contractor ONLINE CONTRACTORS Council Rep _____
 Date: 03/03/2022 Date: _____

F6.2 WATER RETICULATION PIPE LAYING CHECKLIST

Site: CREEKHILL PARK - STAGE 16	Developer: CHEDWICK PROPERTIES				
Name of qualified water service person: TE RUKI SHEEHAN					
Location:	To RD 5 S17	To RD 2 S17	To RD 2 S17	To RD 4	To RD 4 S17
	From RD 4/3	From RD 2/2A	From RD 2/4	From RD 3/4	From RD 4

Pipe Laying Checks

Pipe size, quality, acceptable products checked. (attach photo of manufacturer's stamp on pipe)	150MM PN12.5 <input checked="" type="checkbox"/>	150MM PN12.5 <input checked="" type="checkbox"/>	63MM PN12.5 <input checked="" type="checkbox"/>	150MM PN12.5 <input checked="" type="checkbox"/>	63MM PN12.5 <input checked="" type="checkbox"/>
Foundation support in soft soil					
• Dynamic cone penetrometer (DCP) results available	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• if under-cutting required, note metreage and DCP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Valves and hydrants not in carriageway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment and cover	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and backfill material. (Attach DCP results for road crossings and driveways)	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>
All service connections in place. (Attach table of water meter and backflow preventor numbers with corresponding lot numbers.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connections and Toby Box correctly located horizontally and vertically (Dwg D6.6 & 6.7)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hydrants and valves positioned correctly (Dwg D6.1-6.3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thrust blocks installed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipelines flushed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken prior to backfill.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Bacto sample taken and passed by Council representative PRIOR to connection to the live Council main.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connection to live main by Council (unless specifically approved).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Main left charged at FAC level of _____ ppm					

 DIRK VA

Developer/Contractor ONLINE CONTRACTORS Council Rep _____
 Date: 03/03/2022 Date: _____

F6.2 WATER RETICULATION PIPE LAYING CHECKLIST

Site: CREEP HILL PARK - STAGE 16	Developer: CHEDWORTH PROPERTIES				
Name of qualified water service person: TERUKI SHEEHAN					
Location:	ALERS To S25A	To WATKINS	To WATKINS	To	To
	From RD1/2A	From RD3/ WATKINS	From RD3/ WATKINS	From	From

Pipe Laying Checks

Pipe size, quality, acceptable products checked. (attach photo of manufacturer's stamp on pipe)	150mm PN12.5 <input checked="" type="checkbox"/>	150mm PN12.5 <input checked="" type="checkbox"/>	63mm PN12.5 <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation support in soft soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Dynamic cone penetrometer (DCP) results available	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• if under-cutting required, note metreage and DCP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Valves and hydrants not in carriageway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment and cover	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedding type and backfill material. (Attach DCP results for road crossings and driveways)	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	SAND <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All service connections in place. (Attach table of water meter and backflow preventor numbers with corresponding lot numbers.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connections and Toby Box correctly located horizontally and vertically (Dwg D6.6 & 6.7)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydrants and valves positioned correctly (Dwg D6.1-6.3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thrust blocks installed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipelines flushed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As-built measurements taken prior to backfill.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bacto sample taken and passed by Council representative PRIOR to connection to the live Council main.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection to live main by Council (unless specifically approved).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main left charged at FAC level of _____ ppm					

[Signature]
D. R. R. V. D.

Developer/Contractor ONLINE CONTRACTORS Council Rep _____
 Date: 03/03/2022 Date: _____

F6.3 WATER RETICULATION FINAL INSPECTION CHECKLIST

Site/Location:	GREEN HILL PARK STAGE 16		
Developer/Contractor:	ONLINE CONTRACTORS LTD		
SUB _____ / _____	Contract No: _____		


Pre-Meeting Tasks

Developer to verify prior to meeting:	Developer Check	Council Rep Check
21. All lines flushed out	<input checked="" type="checkbox"/>	<input type="checkbox"/>
22. All backfilling complete and reinstated	<input checked="" type="checkbox"/>	<input type="checkbox"/>
23. Form 6.1 completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
24. Form 6.2 completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
25. Final as-built plans attached for site inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
26. Connected to existing supply by Council (refer Form 6.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Site Meeting

27. Valves and hydrants correctly marked (Refer drawings D6.2 & D6.4 for indicator posts)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
28. Pavement markers in place	<input checked="" type="checkbox"/>	<input type="checkbox"/>
29. Fire hydrant lids painted	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30. Boxes installed correctly (Refer drawings D6.2 & D6.3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
31. All valves checked on/off	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remedial work required? Yes (please list) No


 Director

Developer/Contractor <u>ONLINE CONTRACTORS</u>	Council Rep _____
Date: <u>03/03/2022</u>	Date: _____

Sample ID	Sample Type	Site	Date Sampled	Date Received	Parameter Name	Result	Units	Lab	Status
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	Temperature On Arrival	15.5	°C	HCC Laboratory	ev
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	Time Sampled (client)	10:10		Client	ev
2021007675	Hamilton Reticulation Maintenance	Greenhill 1	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	Temperature On Arrival	17.2	°C	HCC Laboratory	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	Time Sampled (client)	10:20		Client	ev
2021007676	Hamilton Reticulation Maintenance	Greenhill 2	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	1	cfu/mL	HCC Laboratory	mv
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	Temperature On Arrival	17.8	°C	HCC Laboratory	ev
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	Time Sampled (client)	10:30		Client	ev
2021007677	Hamilton Reticulation Maintenance	Greenhill 3	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	Temperature On Arrival	18.4	°C	HCC Laboratory	ev
2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev





2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	Time Sampled (client)	10:35		Client	ev
2021007678	Hamilton Reticulation Maintenance	Greenhill 4	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	Temperature On Arrival	17.5	°C	HCC Laboratory	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	Time Sampled (client)	10:40		Client	ev
2021007679	Hamilton Reticulation Maintenance	Greenhill 5	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	Temperature On Arrival	18.3	°C	HCC Laboratory	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	Time Sampled (client)	10:45		Client	ev
2021007680	Hamilton Reticulation Maintenance	Greenhill 6	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	Temperature On Arrival	20.0	°C	HCC Laboratory	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	Time Sampled (client)	10:50		Client	ev
2021007681	Hamilton Reticulation Maintenance	Greenhill 7	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev

2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	Temperature On Arrival	19.7	°C	HCC Laboratory	ev
2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	Time Sampled (client)	10:55		Client	ev
2021007682	Hamilton Reticulation Maintenance	Greenhill 8	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	Temperature On Arrival	19.8	°C	HCC Laboratory	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	Time Sampled (client)	11:00		Client	ev
2021007683	Hamilton Reticulation Maintenance	Greenhill 9	24/11/2021	24/11/2021	Sampler (client)	Lance Parkes		Client	ev

Greenhill Stage 16

Greenhill Stage 16

Complete

Score	0%	Failed items	0	Actions	0
Location	Athier Avenue, Chartwell, Hamilton 3281, New Zealand (-37.754602899999995, 175.29982099999998)				
Conducted on	19 Nov 2021 09:47 NZDT				
Test type	Water pressure test				
Pipe type	150mm - SN16 - uPVC 63mm - PN12 - mdpe				
MH # tested	Nil				
MH # to MH #	Nil				
Tested by	 Online 19 Nov 2021 10:09 NZDT				
Inspector/Auditor	Lance Parkes				
Comments					
Photos	   Photo 1 Photo 2 Photo 3				
Pass/Fail	Pass				

Appendix



Photo 1



Photo 2



Photo 3

APPENDIX 4

Wastewater Construction and QA Records

- Wastewater Pipe Laying Checklist F5.2
- Wastewater Manhole Checklist F5.3
- Wastewater trench Backfill Summary Checklist F5.4
- Wastewater Final Inspection Checklist F5.6
- Pressure Test Results
- CCTV submission email



F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>					
Name of certified drainlayer: <u>RW</u>					
Location: Pipe length (MH To MH)	<u>18.4</u>	to	<u>1-14</u>	to	<u>1-13</u>
				to	<u>1-12</u>
				to	<u>1-11</u>
				to	<u>1-10</u>

Pipe Laying Checks

Trench Safety	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Batter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Surveyors name <u>online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Dynamic cone penetrometer (DCP) results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>40/20</u>					
Bulk Backfill material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Sand/Brown Rock</u>					
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>					
Name of certified drainlayer: <u>RW</u>					
Location: Pipe length (MH To MH)	<u>1.10</u> to <u>1.10.1</u>	<u>1.10</u> to <u>1.09</u>	<u>1.9</u> to <u>1.9.4</u>	<u>1.9.4</u> to <u>1.9.3</u>	<u>1.9.3</u> to <u>1.9.2</u>

Pipe Laying Checks

Trench Safety	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Batter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
– Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
– Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
– Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
– if under cutting required, note metreage and DCP results.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material: <u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material: <u>Sand/Bran Rock</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>					
Name of certified drainlayer: <u>KW</u>					
Location: Pipe length (MH To MH)	<u>1.2</u> to <u>1.1</u>	<u>1.1</u> to <u>1.0</u>	<u>1.0</u> to <u>1.1</u>	<u>1.1</u> to <u>1.0</u>	<u>1.0</u> to <u>1.5</u>

Pipe Laying Checks

Trench Safety	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Batter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Sand/Brass Roll</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s):	30410				
Name of certified drainlayer:	RW				
Location: Pipe length (MH To MH)	1.7 to 1.70.1	1.7 to 1.71.4	1.71.4 to 1.71.4	1.71.4 to 1.71.4	1.71.4 to 1.71.4

Pipe Laying Checks

Trench Safety	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Batter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Surveyors name <u>online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Dynamic cone penetrometer (DCP) results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Le070</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Sand / Brown Peat</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F5.3 WASTEWATER MANHOLE CHECKLIST

Engineering Plan Number(s)	30410				
Name of certified drainlayer:	RW				
Location: Pipe length (MH To MH)	1.14	1.13	1.12	1.11	1.10
Manhole Construction Checklist	MH number				
Manhole size, quality, manufacturer on acceptable materials list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sealing strip between risers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Benching					
• Height	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Alignment and cross section	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Half pipe lining (wastewater only)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Step recesses (if applicable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flexible joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access details per drawings (e.g. manhole cover sited over steps).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step irons including epoxy to outside recesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No debris in pipelines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe invert fall through manhole	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F5.3 WASTEWATER MANHOLE CHECKLIST

Engineering Plan Number(s) <u>30410</u>					
Name of certified drainlayer: <u>RW</u>					
Location: Pipe length (MH To MH)	<u>1.9.1</u>	<u>1.8</u>	<u>1.7</u>	<u>1.7B1</u>	<u>1.7A4</u>
Manhole Construction Checklist	MH number				
Manhole size, quality, manufacturer on acceptable materials list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sealing strip between risers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Benching					
• Height	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Alignment and cross section	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Half pipe lining (wastewater only)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Step recesses (if applicable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flexible joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access details per drawings (e.g. manhole cover sited over steps).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step irons including epoxy to outside recesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No debris in pipelines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe invert fall through manhole	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date



BACKFILL RESULT SHEET

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 SEWER		
	C/L Trench(CIV VALUES)		
Sewer Chainage	1ST LIFT	2ND LIFT	Remarks
EX Stub			
5	23	26	BROWN ROCK 1M TESTS
WWMH1.14			
5	25	22	BROWN ROCK 1M TESTS
WWMH1.13			
10	21	19	BROWN ROCK 1M TESTS
20	25	21	BROWN ROCK 1M TESTS
30	23	22	BROWN ROCK 1M TESTS
40	22	24	BROWN ROCK 1M TESTS
50	26	21	BROWN ROCK 1M TESTS
70	21	24	BROWN ROCK 1M TESTS
80	21	22	BROWN ROCK 1M TESTS
90	20	23	BROWN ROCK 1M TESTS
WWMH1.12			
10	24	19	BROWN ROCK 1M TESTS
20	31	25	BROWN ROCK 1M TESTS
30	22	27	BROWN ROCK 1M TESTS
40	20	24	BROWN ROCK 1M TESTS
50	21	23	BROWN ROCK 1M TESTS
60	25	22	BROWN ROCK 1M TESTS
70	22	23	BROWN ROCK 1M TESTS
80	24	20	BROWN ROCK 1M TESTS
WWMH1.11			
10	22		
20	23		
WWMH1.10			
10	25		
20	22		
30	24		
40	21		
50	21		
WWMH1.9			
10	23		
20	25		
30	22		
40	21		
50	22		
60	22		
WWMH1.8			
10	23		
20	24		
30	22		
40	22	23	
50	26	21	

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 SEWER		
60	30	25	
70	24	23	
WWMH1.7			
10	21	25	
20	24	22	
30	27	25	
40	25	24	
50	23	24	
WWMH1.6			
10	23	22	
20	24	21	
30	21	19	
40	23	20	
50	23	24	
WWMH1.5			
10	19	21	
20	22	20	
30	21	23	
40	23	24	
50	27	22	
60	28	25	
WWMH1.4			
10	23		
20	24		
30	22		
40	22	23	
50	24	22	
WWMH1.3			
10	22	24	
20	20	21	
30	23		
40	23		
50	21		
60	22		
WWMH1.2			
10	20		
20	21		
30	23		
40	25		
50	24		
60	21		
WWMH1.1			
WWMH1.9			
10	19		
20	22		
WWMH1.9.4			
10	25		
20	21		

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 SEWER		
30	22		
40	23		
50	19		
60	24		
WWMH1.9.3			
10	20		
20	25		
30	23		
40	21		
50	22		
60	22		
WWMH1.9.2			
10	23		
20	24		
30	23		
40	22		
50	33		
60	21		
70	24		
80	26		
90	22		
100	23		
WWMH1.9.1			
WWMH1.10			
10	22		
20	24		
30	22		
40	20		
50	23		
WWMH1.10.1			
WWMH1.7			
10	21	23	
20	23	24	
30	22	24	
40	24		
50	20		
WWMH1.7A-4			
WWMH1.7			
10	26		
20	23		
30	24		
WWMH1.7B-1			
WWMH1.7A-4			
10	23		
20	24		

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 SEWER		
30	500 SAND ONLY		
40	500 SAND ONLY		
50	500 SAND ONLY		
WWMH1.7A-3			
10	500 SAND ONLY		
20	500 SAND ONLY		
30	500 SAND ONLY		
40			
50			
WWMH1.7A-2			
10	500 SAND ONLY		
20	500 SAND ONLY		
30	500 SAND ONLY		
WWMH1.7A-1			

F5.4 WASTEWATER TRENCH BACKFILL COMPACTION TEST SUMMARY (ATTACH INDIVIDUAL TEST REPORTS)

Technician Carrying out Tests:	West
Location:	GHIP
Plan No(s):	30410
From MH	1.84-1.14-1.13-1.12-1.11-1.10-1.9-1.8-1.7
Acceptance Criteria:	CBR > 15
Tests by:	West

(attached)

Analysis of Results

Trench backfill completed satisfactorily

or

Trench backfill requires remedial work as follows:

West Construction

2-2-22

Developer/Contractor

Date

F5.4 WASTEWATER TRENCH BACKFILL COMPACTION TEST SUMMARY (ATTACH INDIVIDUAL TEST REPORTS)

Technician Carrying out Tests:	West
Location:	6th
Plan No(s):	30410
From MH	1.7-1.6-1.5-1.4-1.3-1.2-1.1-1.0.1-1.9.4-1.9.3
Acceptance Criteria:	(BR) > 15
Tests by:	West

(attached)

Analysis of Results

Trench backfill completed satisfactorily

or

Trench backfill requires remedial work as follows:

West Construction

Developer/Contractor

7-2-22

Date

F5.4 WASTEWATER TRENCH BACKFILL COMPACTION TEST SUMMARY (ATTACH INDIVIDUAL TEST REPORTS)

Technician Carrying out Tests:	West
Location:	6HP
Plan No(s):	30410
From MH	1.9.3-1.9.2-1.9.1-1.7(1.7B-1)-1.7-1.7A4-1.7A3
Acceptance Criteria:	CBR > 15
Tests by:	West

(attached)

Analysis of Results

Trench backfill completed satisfactorily

or

Trench backfill requires remedial work as follows:

West Contractor

Developer/Contractor

2-2-22

Date

F5.4 WASTEWATER TRENCH BACKFILL COMPACTION TEST SUMMARY (ATTACH INDIVIDUAL TEST REPORTS)

Technician Carrying out Tests:	West
Location:	6HP
Plan No(s):	30410
From MH	1.7A3-1.7A2-1.7A1
Acceptance Criteria:	CBR > 15
Tests by:	West

(attached)

Analysis of Results

Trench backfill completed satisfactorily

or

Trench backfill requires remedial work as follows:

West Construction

Developer/Contractor

2-2-22

Date

Greenhill Stage 16 & 17

Greenhill Stage 16 & 17

Complete

Score	0%	Failed items	0	Actions	0
Site conducted					Unanswered
Location	Greenhill/Carrs Rd area - Hamilton, Waikato, New Zealand - Stage 16-17 (-37.756803, 175.3008683)				
Conducted on	22 Sep 2021 13:30 NZST				
Test type	Wastewater pressure test				
	MH pressure test -				
Pipe type	150mm - SN16 - uPVC				
	100mm - SN16 - uPVC				
MH # tested	All Waste Water - Stages 16 & 17				
MH # to MH #	All Waste Water - Stages 16 & 17				
Tested by	West's Construction (Matt) 28 Feb 2022 14:27 NZDT				
Inspector/Auditor	Lance Parkes				
Comments					
Photos					
Pass/Fail	Pass				



19-30410-01 Greenhill Park Area LUK

Document Issue Sheet

Issue No: 164

Date: 18 Mar 2022

Issue Notes: Stage 16 Greenhill Park CCTV data

Issued By: Barry Pearson

Documents

Document Title	Document Details	Revision	File Type	Issue Reason
19-30410-01, SW CCTV Stage 16	SW-stage 16, CCTV data	1.0	zip	Review
19-30410-01, WW CCTV Stage 16	Stage 16 WW-CCTV data	1.0	zip	Review

Recipients

Recipient Name	Role	Media	Copies
Brandon Hawalt (Chadworth Properties Ltd Director)		By Download	1
Carol Manning (Hamilton City Council Hamilton)	Client Contact	By Download	1
Grant Coates (Shumpton and Epirock Limited Partnership Toronto)	Project Manager / Project Lead	By Download	1
Laura Parks (Hamilton City Council Hamilton)		By Download	1
Marilyn Smith (Hamilton City Council Hamilton)	HCC Development Engineer (Civil Engineer)	By Download	1
Solaisa Heaton (Hamilton City Council Hamilton)	Council	By Download	1



WASTEWATER PIPE NETWORK – FINAL INSPECTION CHECKLIST

DEVELOPER/CONTRACTOR: West Construction

SITE/LOCATION:

Greenhill Park Stage 1b

SUB: /

CONTRACT NO:

Developer to verify checklist prior to meeting	Developer Check	Council Rep Check
1. All checklists completed (form numbers)	<input checked="" type="checkbox"/>	
2. All lines flushed out	<input checked="" type="checkbox"/>	
3. All required CCTV inspections carried out, reviewed and any re-work completed	<input checked="" type="checkbox"/>	
4. All manholes checked (eg infiltration, plastering)	<input checked="" type="checkbox"/>	
5. All backfilling complete and tidied up	<input checked="" type="checkbox"/>	
6. Pressure test completed and witnessed	<input checked="" type="checkbox"/>	
7. Final as-built and operational plans attached for site inspection	<input checked="" type="checkbox"/>	
Site Meeting		
1. Inspect all main lines	<input checked="" type="checkbox"/>	
2. Inspect all manholes	<input checked="" type="checkbox"/>	
3. Inspect connections	<input checked="" type="checkbox"/>	
4. Works on third party land completed to satisfaction of owner	<input checked="" type="checkbox"/>	
5. Wastewater pumping station data complete and test results (Wastewater Pump Station control programming checklist form attached)		
6. Remedial work required?	Yes (please list) <input type="checkbox"/> No <input checked="" type="checkbox"/>	

West Construction

Developer/Contractor name
(please print)

West

Developer/Contractor signature

21/3/22

Date signed

Council Representative
name (please print)

Council Representative signature

Date signed

APPENDIX 5

Stormwater Construction and QA Records

- Stormwater Pipe Laying Checklist F4.2
- Stormwater Manhole Checklist F4.3
- Trench Backfill Compaction Test Summary F4.4
- Stormwater Backfill Compaction Test Results
- Stormwater Catchpit Checklist F4.5
- Stormwater Final Inspection Checklist F4.6
- CCTV submission email



F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>					
Name of certified drainlayer: <u>R.W</u>					
Location: Pipe length (MH To MH)	<u>B34</u> to <u>B33</u>	<u>B34</u> to <u>B2</u>	<u>B2</u> to <u>B1</u>	<u>B34</u> to <u>B33-1</u>	to

Pipe Laying Checks

Trench Safety					
(a) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Batter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Set out					
- Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Foundation support attached					
- Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bedding type and surround material:					
<u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bulk Backfill material:					
<u>Sand + brown rock</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Wkst Construction

Developer/Contractor

11/11/21

Date

F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>				
Name of certified drainlayer: <u>R.W</u>				
Location: Pipe length (MH To MH)	<u>to</u>	<u>D7</u>	<u>to</u>	<u>D7</u>
		<u>to</u>	<u>D6</u>	<u>to</u>
		<u>to</u>	<u>D6</u>	<u>to</u>
		<u>to</u>	<u>D6-6</u>	<u>to</u>
		<u>to</u>	<u>D6-6</u>	<u>to</u>
		<u>to</u>	<u>D6-5</u>	<u>to</u>
		<u>to</u>	<u>D6-5</u>	<u>to</u>
		<u>to</u>	<u>D6-4</u>	<u>to</u>

Pipe Laying Checks

Trench Safety	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(a) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Batter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Sand / Brown Rock</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

Developer/Contractor

11/11/21

Date

F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>															
Name of certified drainlayer: <u>R.W</u>															
Location: Pipe length (MH To MH)	<u>D6-4</u>	to	<u>D6-3</u>	<u>D6-4</u>	to	<u>D6-4-1</u>	<u>D6-5</u>	to	<u>D6-5-2</u>	<u>Sub out E2</u>	to	<u>E1</u>	<u>A2</u>	to	<u>A2-3</u>

Pipe Laying Checks

Trench Safety					
(a) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Batter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out					
- Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached					
- Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:					
<u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material:					
<u>Sand / Brown Rock</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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11/11/21

Date

F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s): <u>30410</u>					
Name of certified drainlayer: <u>R.W</u>					
Location: Pipe length (MH To MH)		<u>A2-3</u>	to	<u>A2-2</u>	<u>A2-2</u>
			to	<u>A2-1</u>	<u>Swout-B</u>
			to	<u>B5</u>	<u>B5</u>
			to	<u>B4</u>	<u>B4</u>
			to	<u>B4-1</u>	<u>B4-1</u>

Pipe Laying Checks

Trench Safety					
(a) Shield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Batter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe size, quality, manufacturer, on acceptable products list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out					
- Surveyors name <u>Online</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Set out checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Foundation support attached					
- Dynamic cone penetrometer (DCP) results	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- if under cutting required, note metreage and DCP results.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Record daily level check and confirm on grade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround material:					
<u>40/20</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk Backfill material:					
<u>Sand/Brown Rocks</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction (DCP results from pipe to ground level attached)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alignment – control points identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure test witnessed and passed by Council representative.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Service connections

All service connections in place, taped, and staked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
As-built measurements taken, GPS located	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CCTV pipe inspection data and comments supplied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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11/11/21

Date

F4.3 STORMWATER MANHOLE CHECKLIST

Engineering Plan Number(s) <u>30410</u>						
Name of certified drainlayer: <u>R.W.</u>						
Location: length (MH To MH)	Pipe to	<u>5</u>	<u>DB</u>	<u>DB-6</u>	<u>DB-5</u>	<u>DB-4</u>

MH number

Manhole Construction Checklist

Manhole size, quality, manufacturer on acceptable materials list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sealing strip between risers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Benching - Height - alignment and cross section - half pipe lining (wastewater only) - Step recesses (if applicable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flexible joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access details per drawings (e.g. manhole cover sited over steps).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step irons including epoxy to outside recesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No debris in pipelines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe invert fall through manhole	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2/2/22

Developer/Contractor

Date

F4.3 STORMWATER MANHOLE CHECKLIST

Engineering Plan Number(s)					
Name of certified drainlayer:					
Location:	Pipe length (MH To MH)	D6-4-1	D6-3	D6-5	E1
					E2 out

Manhole Construction Checklist	MH number				
Manhole size, quality, manufacturer on acceptable materials list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sealing strip between risers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Benching - Height - alignment and cross section - half pipe lining (wastewater only) - Step recesses (if applicable)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Flexible joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access details per drawings (e.g. manhole cover sited over steps).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step irons including epoxy to outside recesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No debris in pipelines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe invert fall through manhole	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2/2/22

Developer/Contractor

Date

F4.3 STORMWATER MANHOLE CHECKLIST

Engineering Plan Number(s)					
Name of certified drainlayer:					
Location:	Pipe length (MH To MH)	A2-3	A2-2	A2-1	B5
					B4

MH number

Manhole Construction Checklist

Manhole size, quality, manufacturer on acceptable materials list	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sealing strip between risers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Benching - Height - alignment and cross section - half pipe lining (wastewater only) - Step recesses (if applicable)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Flexible joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access details per drawings (e.g. manhole cover sited over steps).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step irons including epoxy to outside recesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bedding type and surround	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No debris in pipelines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe invert fall through manhole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Wesley G. Hetherington

2/2/22

Developer/Contractor

Date



BACKFILL RESULT SHEET

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 Stormwater		
	C/L Trench(CIV VALUES)		
Stormwater Chainage	1ST LIFT	2ND LIFT	Remarks
SWMH D6			
0	22		
10	29		
20	25		
30	24		
SWMH D6-6			
0	23		
10	25		
20	24		
30	24		
SWMH D6-5			
0	24		
10	26		
20	25		
30	24		
SWMH D6-4			
0	23		
10	500SAND		
20	500SAND		
30	500SAND		
SWMH D6-4-1			
SWMH E1			
20	24		
30	26		
SWMH E2			
SWMH D6-5			
10	25		
SWMH D6-5-4			
SWMH D6-4			
10	26		
SWMH D6-3			
SWMH A2			
0	26		
10	27		
20	21		
30	25		
SWMH A2-3			
0	22		
10	24		
20	25		

TESTED BY:	West Construction		
PROJECT NAME :	Greenhill Park Stage 16/17 Stormwater		
30	21		
40	20		
50	22		
SWMH A2-2			
0	21		
10	24		
20	26		
30	25		
40	29		
SWMH A2-1			
SWMH B4			
0	21	23	
10	24	27	
20	28	24	
SWMH B3			
0	22	23	
10	24	22	
20	27	29	
30	21	27	
SWMH B2			
0	23	22	
10	25	25	
20	20		
30	29		
40	28		
50	25		
SWMH B4			
0	20		
10	22		
20	26		
30	24		
40	23		
50	30		
SWMH B4-1			
SWMHC9			
0	24	20	
10	23	24	
30	27	22	
40	22	26	
50	23	24	
SWMHC8			
0	22	24	
10	23	27	
20	24	24	
30	22	26	
40	22	23	

TESTED BY: West Construction
 PROJECT NAME : Greenhill Park Stage 16/17 Stormwater

SWMHC7			
0	21	22	
10	24	24	
SWMHC6			
0	23	22	
10	29		
SWMHC5			
0	24		
10	28		
20	24		
30	26	27	
40	26	23	
SWMHC4			
0	22	25	
10	24	21	
20	24	24	
30	27	20	
40	23		
50	20		
60	22		
SWMHC3			
0	23		
10	22		
20	28		
30	26		
40	25		
SWMHC2			
0	20		
10	23		
20	21		
30	21		
SWMHC1			
SWMHC8			
0	23	25	
10	25	27	
20	21	24	
30	20		
40	26		
50	24		
SWMHC8-2			
0	20		
10	23		
20	24		
30	29		
SWMHC8-1			
SWMHC9			
0	25	21	

TESTED BY:		West Construction	
PROJECT NAME :		Greenhill Park Stage 16/17 Stormwater	
10	24	26	
30	26	24	
40	21		
50	26		
SWMHC9-2			
0	21		
10	23		
20	24		
30	22		
40	27		
SWMHC9-1			

F4.4 STORMWATER TRENCH BACKFILL COMPACTION TEST SUMMARY

(attach individual test reports)

Technician West Construction Carrying out Tests

Location: GHIP

Plan No(s): 30410

From MH D8-D7-D6(D6-6)-(D6-5)-(D6-4)-(D6-4-1)-(D6-3)
-(D6-5-2)-E1-E2

Acceptance Criteria: (BR) 15

Tests by: West (attached)

Analysis of Results

Trench backfill completed satisfactorily as follows: or Trench backfill requires remedial work

West Construction

Developer/Contractor

Date 2-2-22

F4.4 STORMWATER TRENCH BACKFILL COMPACTION TEST SUMMARY

(attach individual test reports)

Technician West Construction Carrying out Tests

Location: GHP

Plan No(s): 30410

From MH A2-(A2-3)-(A2-2)-(A2-1)

Acceptance Criteria: CBR-15

Tests by: West (attached)

Analysis of Results

Trench backfill completed satisfactorily as follows: West Construction or Trench backfill requires remedial work

West Construction

Developer/Contractor

Date

2-2-22

F4.5 STORMWATER CATCHPIT CHECKLIST

Location: GHP	B2	Blk	Blk-1	DIP A3	A2
-----------------------------	----	-----	-------	-----------	----

Catchpit Number

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Location checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Depth of sump below outlet correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of outlet connection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating debris baffle installed correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Backfill compaction around pit checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seating and plastering of surround and grate to sump barrel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All silt and debris removed from sump	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F4.5 STORMWATER CATCHPIT CHECKLIST

Location: GHP	A2-3	A2-2B	A2-2A	A2-1	C9
-------------------------	-------------	--------------	--------------	-------------	-----------

Catchpit Number

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Location checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Depth of sump below outlet correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of outlet connection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating debris baffle installed correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Backfill compaction around pit checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seating and plastering of surround and grate to sump barrel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All silt and debris removed from sump	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F4.5 STORMWATER CATCHPIT CHECKLIST

Location: GHP	B2	Blk	Blk-1	DIP A3	A2
-----------------------------	----	-----	-------	-----------	----

Catchpit Number

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Location checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Depth of sump below outlet correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of outlet connection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating debris baffle installed correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Backfill compaction around pit checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seating and plastering of surround and grate to sump barrel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All silt and debris removed from sump	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date

F4.5 STORMWATER CATCHPIT CHECKLIST

Location: GHP	A2-3	A2-2B	A2-2A	A2-1	C9
-------------------------	-------------	--------------	--------------	-------------	-----------

Catchpit Number

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set out /orientation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Location checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Depth of sump below outlet correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting and plastering of outlet connection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating debris baffle installed correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Backfill compaction around pit checked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seating and plastering of surround and grate to sump barrel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All silt and debris removed from sump	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Construction

2-2-22

Developer/Contractor

Date



19-30410-01 Greenhill Park Area LUK

Document Issue Sheet

Issue No: 164

Date: 18 Mar 2022

Issue Notes: Stage 16 Greenhill Park CCTV data

Issued By: Barry Pearson

Documents

Document Title	Document Details	Revision	File Type	Issue Reason
19-30410-01, SW CCTV Stage 16	SW-stage 16, CCTV data	1.0	zip	Review
19-30410-01, WW CCTV Stage 16	Stage 16 WW-CCTV data	1.0	zip	Review

Recipients

Recipient Name	Role	Media	Copies
Brandon Hawalt (Chadworth Properties Ltd Director)		By Download	1
Carol Manning (Hamilton City Council Hamilton)	Client Contact	By Download	1
Grant Cozles (Shumpton and Epirock Limited Partnership Toronto)	Project Manager / Project Lead	By Download	1
Laura Parks (Hamilton City Council Hamilton)		By Download	1
Marilyn Smith (Hamilton City Council Hamilton)	H2O Development Engineer (Civil Engineer)	By Download	1
Solaisa Heaton (Hamilton City Council Hamilton City Council Hamilton)	Council	By Download	1

APPENDIX 6

Landscaping Certifications

- Landscaping final inspection form requested from HCC



APPENDIX 7

Network Utilities Certifications

- Ultrafast Fibre Completion Letter
- First Gas Completion Letter
- Street Light Product Warranty
- WEL Completion Letter
- Street light Suppliers Declaration of Conformity
- Streetlight Producer Statement
- Streetlight COC & ROI Certificates
- HCC Form Street Light RAMM Data



Ref: S&L Consultants, Surveyors & Engineers – 20413-S16
ID: HN-086-21



0800 342 735
info@ultrafast.co.nz

ultrafastfibre.co.nz

27th of February 2022

ACCEPTANCE BY ULTRAFIBRE LIMITED AS TELECOMMUNICATIONS OPERATOR

Subdivision: Greenhill Park Ruakura Residential Stage 16 (55 Lots), Lot 702, DP 534481, Chartwell, Hamilton.

1. Ultrafast Fibre Limited (UFF) confirms that UFF will be the telecommunications operator of the telecommunications reticulation in the proposed public roads for the Ruakura Residential Stage 16 [Greenhill Park] Hamilton, Subdivision by Chedworth Properties Ltd. (the “**Subdivision**”) Lot 702, DP 534481, to provide network connections to Lot 450 through to Lot 480, and Lots 8001 through to 8024 in the Subdivision (the “**Reticulation**”).
2. The Reticulation is now installed in accordance with:
 - (a) the requirements and standards set by the Hamilton City Council and advised to UFF via the Council’s website; and
 - (b) the requirements of the Telecommunications Act 2001 and all other applicable laws, regulations and codes (as amended).
3. The Reticulation has been installed by Broadspectrum Limited to UFF’s satisfaction, for the specific subdivision lots detailed on the “final” Scheme Plan as attached, with UFF remaining the owner, operator and maintainer of the Reticulation.
4. The attached “final” Scheme Plan must match your submission to the Hamilton City Council and must have the UFF stamp of ‘Approval’ accompanied by sign-off. Any additional lots created after initial deployment of multi-duct/fibre infrastructure will be chargeable.
5. One or more retail service providers will be available to supply telecommunications services over the completed Reticulation when service is available, provided that UFF shall not be responsible if the retail service provider’s offer to supply such telecommunications services or the number of such providers varies from time to time.

SIGNED for and on behalf of
ULTRAFIBRE LIMITED by:

Signature:

A handwritten signature in black ink, appearing to read "R. Gibson", written over a white background.

Name: Russell Gibson

Date: 27th of February 2022



SHRIMPTON & LIPINSKI

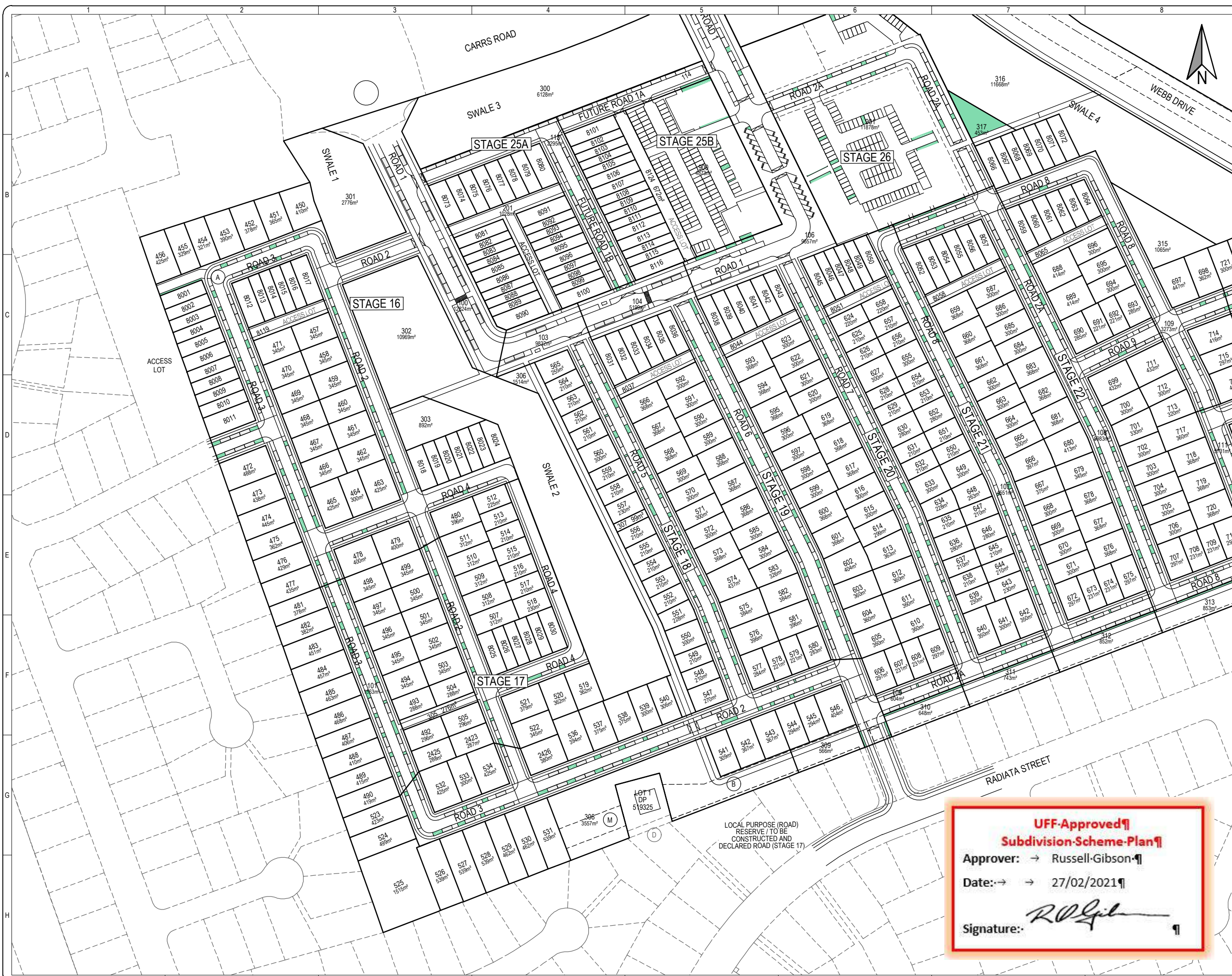
LAND DEVELOPMENT & DESIGN SPECIALISTS

Ph. 07 577 6069
Email: info@sltga.co.nz
P.O. Box 231, Tauranga 3140

www.sltga.co.nz



D:\murasal\Documents\Temp_30410_Chesterworth\Data in out\00-30410_Scheme Plan - Lot Layout Temp.dwg - Plotted: 15/02/2021



UFF-Approved
Subdivision-Scheme-Plan
 Approver: → Russell-Gibson
 Date: → → 27/02/2021
 Signature: *R.G.*

Rev	DESCRIPTION	DRN	CKD	APP	DATE

NAME	DATE	NAME	DATE
SURVEYED	SC 10/20	DESIGNED	
COORDINATE SYSTEM: NZGD2000 - MT EDEN			
ORIGIN OF COORDINATES: BPV DPS 17824			
HEIGHT DATUM: Moturiki Datum 1953			
ORIGIN OF HEIGHT: SS507 SO 42451 - RL - 44.04m			

TITLE

**LOT LAYOUT
AREA LK**

PREPARED FOR

ORIGINAL SCALES @ A3	STATUS
1 : 2000	PRELIMINARY
DO NOT SCALE DIMENSIONS	REVISION
DRAWING NO	
30410-LK-TEMP	-

COPYRIGHT ON THIS DRAWING IS RESERVED

Completion Certificate

To: Chedworth Properties Limited
From: Paul Bird
Cc: Barry Pearson
Date: 29 November 2021

**SUBJECT: Greenhill Park Subdivision – Stage 16
(First Gas Distribution Network)**



MESSAGE:

This Completion Certificate confirms that the First Gas Distribution Network installed at the above-mentioned development, has been laid, tested and commissioned in accordance with First Gas Technical Standards and relevant Gas Regulations.

Regards

A handwritten signature in blue ink, appearing to read 'Paul Bird'.

Paul Bird

Distribution Accounts Manager - New Developments

Firstgas

First Gas | Level 6, Resimac House | 45 Johnston St | Wellington | 6011

DDI 04 979 5367 | M 027 531 0060 | firstgas.co.nz

23 November 2021

Ref: 8579

PRODUCER STATEMENT FOR STREET LIGHTING

Project: Greenhill Park Stage 16, Subdivision

Location: Watkins Street, Chartwell, Hamilton

The lighting for this Project has been designed to comply with the New Zealand standard AS/NZS1158.1.3.2020 for PR4 classified road for Roads 2, 2A, 3 and road 4, based on Low risk and activity and V4 for Road 1 using Perfectlite and AGI32 lighting design software and in conjunction with the Hamilton City Councils Code of Practice and RITS Code of Practice.

Product The P Category luminaire is a Visulo Mini Stork LED 16.6W, 1900 Lumens and for V Category Road a Mini Stork Opt20, LED 39.6W, 4700 Lumen with the lighting column and outreach arm being manufactured from steel which is hot dipped galvanised after fabrication and then coated with a 10 year warranty paint finish

Lifetime The luminaire have an economic life of 15-20 years where normal maintenance is carried out. The pole and outreach have an economic life of 50 years.

Yours Faithfully
IBEX INTERNATIONAL LIMITED



MERRITT STRICKETT

Account Manager - Roadway

M +64 21 220 1291 **T** +64 9 915 1083

merritts@ibexlighting.com

IBEXLIGHTING.COM

DESIGN CERTIFICATE

INFRASTRUCTURE/ LAND DEVELOPMENT

ISSUED BY: Merritt C Strickett.

TO: Chedworth Properties Ltd

TO BE SUPPLIED TO: Hamilton City Council

IN RESPECT OF: Greenhill Park Stage 16, Hamilton

AT: Watkins Street, Chartwell, Hamilton

Merritt C Strickett has been engaged by Chedworth Properties Ltd

To provide Street Lighting Design to AS/NZS1158 Standard and to Hamilton City Councils Code of Practice and RITS code of practice.

in respect of the infrastructure/land development described above.

Drawing references - REF 8579

I **Merritt C Strickett** have the qualifications and experience relevant to this project as set out herein and have designed the subject works and confirm that the design is to current good engineering practice, and that it satisfies all relevant Resource Consent conditions, relevant TA requirements, and applicable codes and standards. My company holds professional indemnity insurance in the sum of **\$5,000,000.00**

Qualifications and experience

NZIHT Workshop, 34 years' experience in Street lighting design.

Efficient Road Lighting Resource Workshop.

ae

Date: 17 November 2021



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P3

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details:
(Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
The prescribed electrical work is: Low risk General High-risk (Specify):

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes – identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes – identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes – identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work:
 Install New Street Column with LED Head
 Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
 Mains Cable, Mains Installation by others.
 Lived in by others.

Test Results (provide values)	
Polarity (Independent earth):	
Insulation resistance:	Ohms
Earth Continuity:	0.0 Ohms
Bonding:	0.0 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 15/12/2021

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P4

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify):

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?
 All Parts (specify):

The work relies on manufacturers instructions: Yes No
 If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019
 Link:

The work has been done in accordance with a certified design: Yes No
 If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: Certified design attached. Roadway Lighting Plan drawing.
 Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No
 If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: SDoC attached
 Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 15/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P5

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details:
(Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
The prescribed electrical work is: Low risk General High-risk (Specify):

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work:
 Install New Street Column with LED Head
 Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
 Mains Cable, Mains Installation by others.
 Livened by others.

Test Results (provide values)	
Polarity (Independent earth):	
Insulation resistance:	Ohms
Earth Continuity:	0.0 Ohms
Bonding:	0.0 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 17/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P6

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify):

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 15/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P7

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 15/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P8

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 17/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247 - P9

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details:

Greenhill Park, Hamilton- Stage 16

Contact Details:
(Name and address)

Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker:

Yeti Martyn

Registration/Practising licence number:

E257490

Phone & email:

yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work:

Addition

Alteration

New work

The prescribed electrical work is:

Low risk

General

High-risk (Specify):

Mains/Main earth

Means of compliance:

Part 1 of AS/NZS 3000

Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required:

No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply?

Yes

No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable)

Yes

No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions:

Yes

No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019
Link:

The work has been done in accordance with a certified design:

Yes

No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.
Link:

The work relies on a Supplier Declaration of Conformity (SDoC):

Yes

No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached
Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010

No

Yes

Description of Work:

Install New Street Column with LED Head
Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
Mains Cable, Mains Installation by others.
Lived in by others.

Test Results (provide values)

Polarity (Independent earth):	
Insulation resistance:	Ohms
Earth Continuity:	0.0 Ohms
Bonding:	0.0 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature:

Date: 17/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P10

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
	Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P11

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P12

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details:

Greenhill Park, Hamilton- Stage 16

Contact Details:
(Name and address)

Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker:

Yeti Martyn

Registration/Practising licence number:

E257490

Phone & email:

yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work:

Addition

Alteration

New work

The prescribed electrical work is:

Low risk

General

High-risk (Specify)

Mains/Main earth

Means of compliance:

Part 1 of AS/NZS 3000

Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required:

No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply?

Yes

No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable)

Yes

No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions:

Yes

No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019
Link:

The work has been done in accordance with a certified design:

Yes

No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.
Link:

The work relies on a Supplier Declaration of Conformity (SDoC):

Yes

No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.

(Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached
Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010

No

Yes

Description of Work:

Install New Street Column with LED Head
Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
Mains Cable, Mains Installation by others.
Lived in by others.

Test Results (provide values)

Polarity (Independent earth):	
Insulation resistance:	Ohms
Earth Continuity:	0.0 Ohms
Bonding:	0.0 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature:

Date: 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P13

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247- P14

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
The prescribed electrical work is: Low risk General High-risk (Specify):

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes – identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes – identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes – identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P15

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE & ELECTRICAL SAFETY CERTIFICATE

REFERENCE/CERTIFICATE ID No.:

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details:

Contact Details:
(Name and address)

Name of Electrical worker:

Registration/Practising licence number:

Phone & email:

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work:

- Addition Alteration New work
 Low risk General High-risk (Specify):

The prescribed electrical work is:

Means of compliance:

- Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken:

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system:

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.

(Or provide reference to readily accessible electronic format, eg Internet link.)

Identify: Manufacturer's instructions attached: VIGLU Street Light Brother LED street luminaire, 20080019
Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.

(Or provide reference to readily accessible electronic format, eg Internet link.)

Identify: Certified design attached: Roadway Lighting Plan drawing
Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.

(Or provide reference to readily accessible electronic format, eg Internet link.)

Identify: SDoC attached
Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work:

Install New Street Column with LED Head
Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
Mains Cable, Mains Installation by others.
Livened by others.

Test Results (provide values)

Polarity (Independent earth):	
Insulation resistance:	200+ M Ohms
Earth Continuity:	0.1 Ohms
Bonding:	0.1 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature:

Date:

Electrical Safety Certificate

By signing this document I certify that the installation, or part of the installation, to which this Electrical Safety Certificate applies is connected to a power supply and is safe to use.

Certifier's name:

Registration/Practising licence number:

Certifier's signature:

Certificate Issue Date:

Connection Date:

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P17

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P19

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P20

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	0.0 Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 21/12/2021

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P21

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P22

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P23

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Lived in by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P24

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton- Stage 16

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify)

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify)

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work: Install New Street Column with LED Head Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk Mains Cable, Mains Installation by others. Livened by others.	Test Results (provide values)	
	Polarity (Independent earth):	
	Insulation resistance:	Ohms
	Earth Continuity:	0.0 Ohms
	Bonding:	0.0 Ohms
	Fault Loop Impedance:	Ohms
Other (specify):		

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 11/1/2022

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P26

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify):

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?

All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes – identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019

Link:

The work has been done in accordance with a certified design: Yes No

If yes – identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: Certified design attached. Roadway Lighting Plan drawing.

Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes – identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)

Identify: SDoC attached

Link:

The installation has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010 No Yes

Description of Work:
 Install New Street Column with LED Head
 Install MEN Board, Main Earth and Earth Stake, Cad Welded Connection - Light Risk
 Mains Cable, Mains Installation by others.
 Livened by others.

Test Results (provide values)	
Polarity (Independent earth):	
Insulation resistance:	Ohms
Earth Continuity:	0.0 Ohms
Bonding:	0.0 Ohms
Fault Loop Impedance:	Ohms
Other (specify):	

By signing this document I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct.

Certifier's signature: **Date:** 15/12/2021

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS



ELECTRICAL CERTIFICATE OF COMPLIANCE

REFERENCE/CERTIFICATE ID No.: #1247-P27

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under Part 1 or Part 2 of AS/NZS 3000 are safe to be connected to the specified system of electrical supply.

Location Details: Greenhill Park, Hamilton

Contact Details: (Name and address) Kerryn S KerrynS@ibexlighting.com

Name of Electrical worker: Yeti Martyn **Registration/Practising licence number:** E257490

Phone & email: yeti@nwl.kiwi

Name and registration number of person(s) supervised:

Certificate of Compliance

Type of work: Addition Alteration New work
 Low risk General High-risk (Specify):

The prescribed electrical work is: Mains/Main earth

Means of compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000

Additional Standards or electrical code of practice were required: No Yes (specify):

Date or range of dates that prescribed electrical work undertaken: 13/12/2021 to 14/12/2021

Contains fittings that are safe to connect to a power supply? Yes No

Specify type of supply system: 230V MEN

The installation has an earthing system that is correctly rated (where applicable) Yes No

Parts of the installation to which this certificate relates that are safe to connect to a power supply?
 All Parts (specify):

The work relies on manufacturers instructions: Yes No

If yes - identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: Manufacturer's instructions attached. VIOLU Stork Little Brother LED street luminaire, 20/05/2019
 Link:

The work has been done in accordance with a certified design: Yes No

If yes - identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: Certified design attached. Roadway Lighting Plan drawing.
 Link:

The work relies on a Supplier Declaration of Conformity (SDoC): Yes No

If yes - identify the SDoC including name, date and version OR EESS registration. Also attach a copy of the SDoC to this certificate.
 (Or provide reference to readily accessible electronic format, eg internet link.)
 Identify: SDoC attached
 Link:

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Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

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High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
	Educational	Healthcare	Miscellaneous (other)	

Certifying Electrical Work and Certificate of Compliance (CoC) details:

Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
	Educational	Healthcare	Miscellaneous (other)	

Certifying Electrical Work and Certificate of Compliance (CoC) details:

Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
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Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
	Educational	Healthcare	Miscellaneous (other)	

Certifying Electrical Work and Certificate of Compliance (CoC) details:

Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
	Educational	Healthcare	Miscellaneous (other)	

Certifying Electrical Work and Certificate of Compliance (CoC) details:

Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
Mains parallel generation – 6A(2)(a)(iii)	Animal stunning or meat conditioning – 6A(2)(c)	
Other – please describe:		

Declaration

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(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:



Reference/Record Number:

Issuer (Inspector) details:

Name of Inspector:

Registration #:

Email Address:

Telephone:

Location of Installation:

Location details:

Location Type:	Domestic	Non-Domestic Accommodation	Industrial	Commercial
	Educational	Healthcare	Miscellaneous (other)	

Certifying Electrical Work and Certificate of Compliance (CoC) details:

Name of Electrical worker(s):

Registration #:

CoC details:

CoC(s) attached

Certifying Electrical Work and CoC details:

What was inspected:

Specify the regulation(s) and companion standard(s), or identify the certified design, followed when carrying out the inspection:

What are the results of the inspection:

High Risk Category:

Not to AS/NZS 3000 Part 2 – 6A(2)(a)(i)	Photovoltaic system – 6A(2)(a)(iv)	Electrical medical area – 6A(2)(a)(vi)
High voltage installation – 6A(2)(a)(ii)	Hazardous area – 6A(2)(a)(v)	Mains work – 6A(2)(b)
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Other – please describe:		

Declaration

I hereby confirm that the work described above has been done ~~in / not in~~ accordance with the regulations; and the ~~installation / part~~ installation on which the work has been done is, and ~~will be / not be~~, when enlivened, electrically safe.

(Note: Strike out or delete the inapplicable words highlighted in red above.)

Signature:

Date:

F3.10 RAMM STREETLIGHT DATA

(to be completed for each change in streetlight type)

Subdivision and stage/Contract GREENHILL PARK STAGE 16

Number of street lights of this type 19

General

Date Installed 19/1/2022

Control Type Network Streetlight Feed / Photocell / Other:

Origin of Power Supply Streetlight Circuit Metered Power Supply

Light

Manufacturer VIZULO (IBEX)

Model MINI STORK

Total Power Consumption (W) 16.6W

Light Height (m) 6m

Tilt Angle (° Degrees) ZERO DEGREES

Outreach

Outreach Type Curved / Mitre Other Decorative MILFORD

Outreach Distance (m) 1m

Pole

Manufacturer IBEX LIGHTING

Type Octagonal Circular / Power / Other Decorative

Pole Height (m) 6m

Material Galvanised Steel Steel / Other:

Coating N/A Painted Powder Coated

Colour (if coated) BLACK

Mounting Frangible ground plant / Shear Base

- Manufacturer's Warranty documents for Poles, Lights and Coatings attached.
- Shown on as-built drawings.

F3.10 RAMM STREETLIGHT DATA

(to be completed for each change in streetlight type)

Subdivision and stage/Contract GREENHILL PARK STAGE 16

Number of street lights of this type 3

General

Date Installed 19/1/2022

Control Type Network Streetlight Feed Photocell / Other:

Origin of Power Supply Streetlight Circuit / Metered Power Supply

Light

Manufacturer VIZULO (IBEX)

Model MINI STORK

Total Power Consumption (W) 39.6W

Light Height (m) 8m

Tilt Angle (° Degrees) ZERO DEGREES

Outreach

Outreach Type Curved / Mitre Other Decorative Milford

Outreach Distance (m) 1m

Pole

Manufacturer IBEX LIGHTING

Type Octagonal Circular Power / Other Decorative:

Pole Height (m) 8m

Material Galvanised Steel Steel / Other:

Coating N/A Painted Powder Coated

Colour (if coated) BLACK

Mounting Frangible ground plant Shear Base

- Manufacturer's Warranty documents for Poles, Lights and Coatings attached.
- Shown on as-built drawings.

IBEX 10 Year Limited Warranty – Project Warranty

Date: 04-11-2021

Project: Greenhill Park, Stage 16

Ref: 8579-00

Issued To: Chedworth Properties Limited

Transfer Provision: Hamilton City Council

a) This limited warranty is provided by Ibex International limited (“Ibex”) in relation to the following products;

Luminaire – Vizulo Mini Stork Lens21 (5 year warranty)

Vizulo Mini Stork Optic 20 (5 year warranty)

Column – 6m and 8m Tapered column with ‘Milford’ Outreach (10yr Warranty Black paint Finish)

b) Ibex warrants to the purchaser that it will deliver the product in new condition in the product’s factory packaging. Further, the product will be free of defects in materials and/or workmanship for the warranty period stated.

c) Ibex has sole discretion as to whether any warranty claim shall be valid considering all factors including (without limitation) the operating conditions the product has endured and the overall performance of the product. this warranty is only valid when proof of purchase can be provided and if the product has been operating within New Zealand

d) The warranty period commences from the date of Ibex’s invoice or the product’s delivery date whichever is the earlier.

e) If Ibex determines that a warranty claim is valid, Ibex will at its sole discretion either refund the purchase price of the product, refund the current market cost of an alternative product, repair the product or replace the product. In case of the repair or replacement the replacement product may not necessary be an identical product but an improved version due to ongoing technological developments and/or supply of original components currently available.

f) Ibex reserve the right to recondition/refurbish any article that is subject to a warranty claim or replace parts with new or used parts in satisfaction of this warranty.

2 – Warranty Exclusions

a) This warranty excludes any costs incurred by the purchaser including (without limitation) equipment hire, labour charges, accommodation charges, transport charges and travel charges.

b) This warranty does not apply to loss or damages to the product caused by one or more of the following:

- Negligence and/or incorrect handling of the product by the buyer, installer, service agent or any other party acting on behalf or for the buyer;
- Improper installation;
- Improper handling;
- the product not being installed or maintained as set out in the installation instruction guide for the product;
- Acts of nature , fire , vandalism;
- Civil disturbances;
- Damages caused by fall or collision
- Installation or operation under environmental conditions beyond the manufacturer’s recommendations;
- Power surges;

- Electrical supply fluctuations or faults;
- Mechanical failures as a result of actions not considered by Ibex to be within the normal operating conditions of the product;

Improper service and/or maintenance work carried out by someone not considered by the Ibex as an approved service agent/facilitator; and/or

- any other situation and/or event or circumstance deemed by Ibex as sufficient to render this warranty void.

c) Notwithstanding any other provision of this warranty or any statute or rule of law, to the greatest extent possible Ibex shall have no liability for any costs, damages or other losses directly or indirectly attributable to failure of the product. Further, Ibex shall have no liability for any costs incurred by any party for any maintenance or remedial work.

3 – Product performance

a) Ibex retains the sole discretion to determine whether a product is defective.

b) This warranty shall apply only to the malfunction of products due to defects in material and or workmanship exceeding nominal failure rates. Unless otherwise stipulated in the product and application specifications provided by Ibex, the nominal failure rate for electronic operating devices and components such as LED's shall be set at 0.2% per 1000 operating hours. Furthermore a decrease in luminous flux of up to 0.6% per 1,000 operating hours and colour shift as per the LED Module /chip suppliers technical data information shall be considered normal and is not covered by this warranty.

c) In the event that LED modules/Chips are replaced, lighting properties may vary from the original product.

4 – Warranty Transfers

this warranty may not be transferred to any entity without either the express written consent of Ibex or this being explicitly stated in the cover notes of this document. Ibex may withhold such consent at its sole and absolute discretion.

5 – Warranty Terms and Conditions

a) In the event where a warranty is claimed on a product which is not faulty, Ibex reserves the right to seek compensation from the entity claiming on the warranty for all costs that have been incurred by Ibex including (without limitation) travel, accommodation, costs of access equipment, and third party service agents' costs.

b) The warranty terms are those specified in wiring in this warranty document only.

c) Ibex's warranty is a back-to-base warranty. Ibex shall bear no responsibility of any charges incurred by any entity for transport of the product to Ibex and/or from Ibex to the warranty claimant.

d) Labour and Service charge incurred by Ibex in repairing / refurbishing any product are not covered in this warranty.

e) The warranty shall be void if the product has been tampered with or parts replaced by personnel that have not be previously authorised by Ibex in writing.

Ibex reserves the right to modify this warranty at any time without prior notification and the new warranty terms shall be valid for all orders placed with the Ibex on or after the new issue date, from the date that the new warranty terms are posted on Ibex's website.

APPENDIX 8

Miscellaneous Check Lists and Producer Statements

- Subdivision Works Clearance Application Form
- Subdivision Certification Application Form
- Contractor Producer Statement Form
- Land Transfer Plan LT 570351
- Schedule of Engineering Value
- Developers Tax Invoice
- Consultant Certification Statement Form
- Asbuilt Statement Form

Strategic Development Unit Works Clearance Checklist

Note: Please refer to the Regional Infrastructure Technical Specifications for testing requirements and guidelines.

Consent Ref: 011.2019.7140.003

Site Address: Carrs Road, Greenhill Park

New Street Name: Stage 16 – Greenhill Park

Development Engineer:

Documentation	Completed	Date	Notes
General			
GST register for all vested asset (PG L4 and PG L5)	Y	21-3-2022	Attached
Upsize contribution documentation	N/A		
WEL completion certificate			TBC
Gas completion certificate (where necessary)	Y	29-11-2021	Attached
UFF completion certificate	Y	27-2-2022	Attached
Roading			
Completion Certificate (PS4 or similar)	Y	14-3-2022	Attached (schedule 6, App 4i, 4ii and 4iii)
Subgrade			
- Stringing or survey of prepared surface (relative shape and height)	Y	5-10-2021	Attached survey excel spreadsheet
- Compaction (natural subgrade – Scala, SIL sand-Scala, SIL brown rock – Clegg)	Y	5-10-2021	Attached (Clegg results)
Subbase			
- Stringing (relative shape and height)	Y	13-1-2022	Attached survey excel spreadsheet
- Compaction (clegg)	Y	13-1-2022	Attached
- Nuclear densometer (NDMS)	Y	14-1-2021	Attached
Basecourse			
- Stringing (relative shape and height)	Y	18-1-2022	Attached

- Compaction (clegg)	Y	20-1-2022	Attached
- Nuclear densometer (NDMS)	Y	14-1-2022 & 18-1-2022	Attached
- Benkelman beam test	Y	18-1-2022 & 21-1-2022	Attached
RAMM Pavement	Y	28-1-2022	Attached
RAMM Surfacing	Y	28-1-2022 2-2-2022	Attached
Streetlight			
Asbuilt Plan	Y	18-3-2022	Attached
RAMM Streetlight	Y	21-3-2022	Attached
Copy of approved application for new connection			TBC
Producer Statement	Y	21-3-2022	Attached
CoC or ESC signed by authorised person	Y (COC's) Y (ROI's)	15-12-2021 19-1-2021	Attached Attached
Asbuilt in format approved by WEL			TBC
Confirmation of practical completion or 224c sign off			TBC
WEL Networks approval sheet (Written confirmation from WEL for the acceptance of all underground cabling and circuitry)			TBC
Manufacturer's Warranty Documents	Y	21-3-2022	Attached
Road Drainage			
Asbuilt plan (subsoil/catchpit/leads	Y	18-3-2022	Attached
Secondary flow path	Y	18-3-2022	Attached
Signage and Marking Asbuilt Plan	Y	18-3-2022	Attached
Water			
Water as-built plan	Y	18-3-2022	Attached
Data Sheet	Y	21-3-2022	Attached
Pressure test certificate	Y	19-11-2021	Attached
DXF (if >2 lots)	N/A		
Bacteriological test result	Y	24-11-2021	Attached

Hydrant test (where necessary)	N/A		
RITS checklists			
- F6.1 Water reticulation design confirmation,	Y	13-8-2021	Attached
- F6.2 Water reticulation pipe laying checklist,	Y	15-3-2022	Attached
- F6.3 Water reticulation final inspection checklist	Y	15-3-2022	Attached
Wastewater			
Wastewater as-built plan	Y	18-3-2022	Attached
Data sheet	Y	21-3-2022	Attached
DXF (if >2 lots)	N/A		
CCTV investigation	Y	8-3-2022	Attached email confirmation
Pipe Pressure test	Y	22-9-2021	Attached
Manhole pressure test	N/A		
Trench backfill	Y	Not dated	Attached (Clegg results)
RITS checklist			
- F5.1 wastewater design confirmation,	Y	13-8-2021	Attached
- F5.2 Wastewater pipe laying checklist,	Y	2-2-2022	Attached
- F5.3 Wastewater manhole checklist,	Y	2-2-2022	Attached
- F5.4 Wastewater trench backfill test summary,	Y	2-2-2022	Attached
- F5.6 Wastewater pipe network- final inspection checklist,	Y	21-3-2022	Attached
- F5.7 Pump station control programming checklist	N/A		No pump stations in stage 16
Stormwater			
Stormwater as-built plan	Y	18-3-2022	Attached
Data sheet	Y	21-3-2022	Attached

DXF (if >2 lots)	N/A		
Wetland as-built plan (see RITS for minimum details required)	N/A		
Completed planting plan (confirmation that plants are in accordance with the accepted plan)	Y	17-3-2022	Attached
Proprietary device completion certificate	N/A		
Final operation and maintenance manual	N/A		
CCTV investigation	Y	8-3-2022	Attached email confirmation
Trench backfill	Y	Not dated	Attached (Clegg Results)
RITS checklist			
- F4.1 Stormwater design checklist,	Y	13-8-2021	Attached
- F4.2 Stormwater pipe laying checklist,	Y	11-11-2021	Attached
- F4.3 Stormwater manhole checklist,	Y	2-2-2022	Attached
- F4.4 Stormwater trench backfill compaction test summary,	Y	2-2-2022	Attached
- F4.5 Stormwater catchpit checklist,	Y	2-2-2022	Attached
- F4.6 Stormwater pipe network final inspection checklist,	Y	18-3-2022	Attached
- F4.7 Wetland construction inspection checklist,	N/A		
- F4.8 Wetland and inspection/Sign off checklist	N/A		
- Final Operation and Maintenance Manual	N/A		
- Final Water Impact Assessment	N/A		
Parks and Open Spaces Street trees/planting sign off	Y	17-3-2022	Attached As Built Plan by Boffa Miskell

Bond			
Quote	N/A		
Signed bond form			To be supplied from HCC
Other:	N/A		

Subdivision Works Clearance Application Form

Agent details (where an agent is applying on behalf of the consent holder)

Agent name:	<input type="text"/>
Agent company:	<input type="text"/>
Postal address:	<input type="text"/>
Telephone:	<input type="text"/>
Email:	<input type="text"/>

Subject Site

Site address:	<input type="text"/>		
Legal description:	<input type="text"/>		
Resource consent number:	<input type="text"/>	Date consent issued:	<input type="text"/>
Stage (if applicable):	<input type="text"/>	No. of lots (excluding roads/reserves):	<input type="text"/>

Clearances required

Certification required: Engineering Landscaping Other (please specify)

Fees and payment

You will be charged for the time spent by staff in preparing for and undertaking engineering works clearance site visits. Refer to Fees and Charges, as set out on our website at www.hamilton.govt.nz for costs.

Payment of fees is due upon invoice which will be issued at s224c subdivision certification stage.

Agent declaration

As a registered professional surveyor/planner, I confirm that:

- I am satisfied that the engineering and landscaping physical works have been completed in accordance with the Resource Consent
- I accept that my application may be returned if there are outstanding agreements relating to development contribution remissions or valuation of land, or if all information required for works clearance is not submitted

Send

Send applications to subdivision@hcc.govt.nz, drop off via the duty planner at the Municipal Building Garden Place, between 8am – 4.45pm, Monday to Friday or post to Planning Guidance Subdivisions, Hamilton City Council, Private Bag 3010, Hamilton 3240.

Documentation to provide:

- The attached checklist
- All required information listed in the checklist

OFFICE USE ONLY

Documentation saved to TRIM

Authority updated

Acknowledgement sent

Works Clearance Checklist

PART A - QA DOCUMENTATION:

a. General

	Received	Date
Easements required		
Consent notices required		
Power, telecommunication, gas connections certification		
Contractor Certificate		
Producer Statement		

b. Parks

Landscaping Plans Accepted Date:

	Approved by	Date
Final Inspection Checklist		

c. Roading

Engineering Plans Accepted Date:

	Approved by	Date
Subgrade Compaction/Relative Height		
Subbase Compaction/Relative Height		
Basecourse Compaction/Relative Height		
Penetrometer Results		
Clegg Hammer Results		
Benkelman Beam Results		

d. Stormwater

Engineering Plans Accepted Date:

	Approved By	Date
Wetlands and Ponds Management Checklist		
Wetlands and Ponds Inspection Checklist		
Pipe Laying Checklist		
Manhole Checklist		
Trench Backfill Compaction Test		
Catchpit Checklist		
Final Inspection Checklist		
Stormwater device Operations and Maintenance Manual supplied		

e. Wastewater

Engineering Plans Accepted

Date:

	Approved By	Date
Pipe Laying Checklist		
Manhole Checklist		
Trench Backfill Compaction Test		
Final Inspection Pipe Network		
Pumping Station Check Forms		
Pressure Test Results		

f. Water

Engineering Plans Accepted

Date:

Form/Process	Approved By	Date
Pipe Laying Checklist		
Final Inspection Checklist		
Pressure Test Results		
Bacteriological Test Results		

PART B - ASBUILT DATA:

a. Roading

Data	Received	Checked
RAMM data		
Streetlight Data		
Asbuilt Plans		
DXF Files		

b. Stormwater

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

c. Wastewater

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

d. Water

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

e. Parks

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

f. Finance

Data	Received	Checked
GST Values		
Land Values		
Asset Quantities		

PART C – CONDITIONS/BONDS:

Documentation	Received	Checked
Engineering conditions attached and completed		
Bond requested and quote attached		

Subdivision Certification Application Form

Agent details (where an agent is applying on behalf of the consent holder)

Agent name:

Agent company:

Postal address:

Telephone:

Email:

Preferred means of contact: Mail Email Phone

Consent holder name

Consent holder name:

Postal address:

Telephone:

Email:

Debtor details (for invoicing)

Debtor is: Agent Owner Other (please specify)

Debtor's Name:

Postal address:

Subject Site

Site address:

Legal description:

Resource consent number: Stage Number:

Certification required

Certification required: s223 s224(c) s224(f) s32(2)(a)

Other (please specify)

Condition(s) of consent requirements

As a registered professional surveyor/planner, I confirm that:

1. For larger/complex consents, I have attended a pre-application meeting with Hamilton City Council staff to review my draft s224c application.
2. I hereby attach all information required to satisfy Hamilton City Council that all conditions specified in the subdivision consent referenced above (in terms of certification required) have been met.
3. I accept that where it is found that not all information required under clause 2 above is provided, this application shall be returned to the address for re-lodgement.
4. Where an engineering or similar professionally prepared plan and supporting information (such as landscaping or ecological plan) has to be approved by council, I have attached written evidence of such approval.
5. Where evidence of completion and approval of all physical works is required (e.g. construction of services, landscape planting). I have attached written evidence of such approval.
6. The required Landonline electronic certification documentation have been prepared and submitted to Hamilton City Council for approval.

Acceptance

I confirm that all of the above have been satisfied.

Name:

Date:

Send

Send applications to subdivision@hcc.govt.nz, drop off via the duty planner at the Municipal Building Garden Place, between 8am – 4.45pm, Monday to Friday or post to **Planning Guidance Subdivisions, Hamilton City Council, Private Bag 3010, Hamilton 3240.**

Remember to attach:

- Conditions of subdivision consent documentation
- Works clearance certificate

SCHEDULE 6 – FORM OF PRODUCER STATEMENT - CONSTRUCTION

ISSUED BY	ONLINE CONTRACTORS 2016 LTD
TO	CHEDWORTH PROPERTIES LTD
IN RESPECT OF	GREENHILL PARK STAGE 16 INCLUDING: SUBDIVISION CIVIL WORKS, ROADING AND EARTHWORKS
AT	GREENHILL PARK, HAMILTON

ONLINE CONTRACTORS 2016 LTD has contracted to *CHEDWORTH PROPERTIES LTD* to carry out and complete certain building works in accordance with a Contract titled *GREENHILL PARK STAGE 15*.

I Daniel Hopper a duly authorised representative of *ONLINE CONTRACTORS 2016 LTD* believe on reasonable grounds that *ONLINE CONTRACTORS 2016 LTD* as carried out and completed:

All

Part only as specified in the attached particulars of the contract works in accordance with the Contract.

Daniel Hopper

14/3/22

Signature of Authorised Agent on behalf of

Date

ONLINE CONTRACTORS 2016 LTD
PO BOX 21187
ROTOTUNA
HAMILTON 3256



Title Plan - LT 570351

Survey Number LT 570351
Surveyor Reference 304/9/105 Area LTK Stage 16
Surveyor Scott Rodney Carley
Survey Firm Shrimpton and Lipinski Limited Partnership
Surveyor Declaration

Survey Details

Dataset Description Lots 2, 130, 301, 450-480, 511, 600-6024, 8117 & 8119 Being a Subdivision of Lot 2 DP 534384
Status Initiated
Land District South Auckland
Submitted Date
Survey Class Class A
Survey Approval Date
Deposit Date

Territorial Authorities

Hamilton City

Comprised In

RT 80627

Created Parcels

Parcels	Parcel Intent	Area	RT Reference
Lot 2 Deposited Plan 570351	Free Simple Title	79.5620 Ha	1030213
Lot 100 Deposited Plan 570351	Vesting on Deposit for Road	1.0410 Ha	
Lot 301 Deposited Plan 570351	Vesting on Deposit for Local Purpose Reserve	0.2710 Ha	1030214
Lot 450 Deposited Plan 570351	Free Simple Title	0.0411 Ha	1030215
Lot 451 Deposited Plan 570351	Free Simple Title	0.0366 Ha	1030216
Lot 452 Deposited Plan 570351	Free Simple Title	0.0378 Ha	1030217
Lot 453 Deposited Plan 570351	Free Simple Title	0.0391 Ha	1030218
Lot 454 Deposited Plan 570351	Free Simple Title	0.0371 Ha	1030219
Lot 455 Deposited Plan 570351	Free Simple Title	0.0329 Ha	1030220
Lot 456 Deposited Plan 570351	Free Simple Title	0.0358 Ha	1030221
Lot 457 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030222
Lot 458 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030223
Lot 459 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030224
Lot 460 Deposited Plan 570351	Free Simple Title	0.0315 Ha	1030225
Lot 461 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030226
Lot 462 Deposited Plan 570351	Free Simple Title	0.0315 Ha	1030227
Lot 463 Deposited Plan 570351	Free Simple Title	0.0425 Ha	1030228
Lot 464 Deposited Plan 570351	Free Simple Title	0.0330 Ha	1030229
Lot 465 Deposited Plan 570351	Free Simple Title	0.0435 Ha	1030230
Lot 466 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030231
Lot 467 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030232
Lot 468 Deposited Plan 570351	Free Simple Title	0.0345 Ha	1030233

Title Plan - LT 570351

Created Parcels

Parcels	Parcel Intent	Area	KT Reference
Lot 169 Deposited Plan 570351	Fee Simple Title	0.0145 Ha	1030234
Lot 470 Deposited Plan 570351	Fee Simple Title	0.0245 Ha	1030235
Lot 171 Deposited Plan 570351	Fee Simple Title	0.0345 Ha	1030236
Lot 472 Deposited Plan 570351	Fee Simple Title	0.0430 Ha	1030237
Lot 473 Deposited Plan 570351	Fee Simple Title	0.0110 Ha	1030238
Lot 474 Deposited Plan 570351	Fee Simple Title	0.0447 Ha	1030239
Lot 475 Deposited Plan 570351	Fee Simple Title	0.0362 Ha	1030240
Lot 176 Deposited Plan 570351	Fee Simple Title	0.0428 Ha	1030241
Lot 477 Deposited Plan 570351	Fee Simple Title	0.0131 Ha	1030242
Lot 178 Deposited Plan 570351	Fee Simple Title	0.0400 Ha	1030243
Lot 479 Deposited Plan 570351	Fee Simple Title	0.0400 Ha	1030244
Lot 480 Deposited Plan 570351	Fee Simple Title	0.0396 Ha	1030245
Lot 801 Deposited Plan 570351	Fee Simple Title	0.0091 Ha	Multiple
Lot 8001 Deposited Plan 570351	Fee Simple Title	0.0211 Ha	1030246
Lot 8002 Deposited Plan 570351	Fee Simple Title	0.0182 Ha	1030246
Lot 8003 Deposited Plan 570351	Fee Simple Title	0.0182 Ha	1030247
Lot 8004 Deposited Plan 570351	Fee Simple Title	0.0185 Ha	1030247
Lot 8005 Deposited Plan 570351	Fee Simple Title	0.0212 Ha	1030248
Lot 8006 Deposited Plan 570351	Fee Simple Title	0.0115 Ha	1030248
Lot 8007 Deposited Plan 570351	Fee Simple Title	0.0189 Ha	1030249
Lot 8008 Deposited Plan 570351	Fee Simple Title	0.0191 Ha	1030249
Lot 8009 Deposited Plan 570351	Fee Simple Title	0.0192 Ha	1030250
Lot 8010 Deposited Plan 570351	Fee Simple Title	0.0191 Ha	1030250
Lot 8011 Deposited Plan 570351	Fee Simple Title	0.0225 Ha	1030250
Lot 8012 Deposited Plan 570351	Fee Simple Title	0.0272 Ha	1030251
Lot 8013 Deposited Plan 570351	Fee Simple Title	0.0177 Ha	1030251
Lot 8014 Deposited Plan 570351	Fee Simple Title	0.0177 Ha	1030252
Lot 8015 Deposited Plan 570351	Fee Simple Title	0.0177 Ha	1030252
Lot 8016 Deposited Plan 570351	Fee Simple Title	0.0177 Ha	1030253
Lot 8017 Deposited Plan 570351	Fee Simple Title	0.0272 Ha	1030253
Lot 8018 Deposited Plan 570351	Fee Simple Title	0.0250 Ha	1030254
Lot 8019 Deposited Plan 570351	Fee Simple Title	0.0115 Ha	1030254
Lot 8020 Deposited Plan 570351	Fee Simple Title	0.0145 Ha	1030255
Lot 8021 Deposited Plan 570351	Fee Simple Title	0.0115 Ha	1030255
Lot 8022 Deposited Plan 570351	Fee Simple Title	0.0145 Ha	1030256
Lot 8023 Deposited Plan 570351	Fee Simple Title	0.0145 Ha	1030256
Lot 8024 Deposited Plan 570351	Fee Simple Title	0.0145 Ha	1030257
Lot 8117 Deposited Plan 570351	Fee Simple Title	0.0229 Ha	1030257
Lot 8119 Deposited Plan 570351	Fee Simple Title	0.0368 Ha	Multiple
Area A Deposited Plan 570351	Easement		
Area I Deposited Plan 570351	Easement		
Area J Deposited Plan 570351	Easement		
Area K Deposited Plan 570351	Easement		
Area B Deposited Plan 570351	Easement		



Title Plan - LT 570351

Created Parcels

Parcels	Parcel Intent	Area	KT Reference
Area C Deposited Plan 570351	Easement		
Area M Deposited Plan 570351	Easement		
Area W Deposited Plan 570351	Easement		
Area X Deposited Plan 570351	Easement		
Area F Deposited Plan 570351	Easement		
Total Area		<u>32 9001 Ha</u>	



Land Specialists
For Property Development

S&L Project Reference: 30378-05 – Area LUK – Stage 16

Land Registration District

South Auckland

Plan Number

DP 570351

Territorial Authority (the Council)

Hamilton City Council

Memorandum of Easements

Purpose	Shown	Burdened Land	Benefited Land
Right of way	A	Lot 8119 hereon	Lots 8117 – 8117 hereon
Right to convey electricity Telecommunications and gas Right to drain water and sewage	I & J	Lot 811 hereon	Lot 455 hereon & Lot 456 hereon

Schedule of Easements in Gross

Purpose	Shown	Burdened Land	Grantee
Right to drain water	J	Lot 811 hereon	Hamilton City Council
	K	Lot 456 hereon	
Right to convey water	A	Lot 8119 hereon	Hamilton City Council
Right to convey telecommunications	A	Lot 8119 hereon	Tactah First Fire Limited
Right to convey telecommunications	I	Lot 811 hereon	Tactah First Fire Limited
Right to convey electricity & telecommunications	G, J	Lot 811 hereon	WEL Networks Limited

Schedule of Existing Easements

Purpose	Shown	Burdened Land	Document Number
Right of way	B	Lot 2 hereon	E 110/0524,17



S&L Project Reference: 30378-05 – Area LUK – Stage 16

Schedule of Existing Easements in Gross				
Purpose	Shown	Burdened Land	Grantee	Document Number
Right to convey electricity and telecommunications	F	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.11
Right of way	B	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.16
Right to convey electricity and telecommunications	B & C	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.12
Right to convey electricity for earthing purposes	B	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.15
Right to convey telecommunications and computer media	B	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.10
Right to convey, discharge and earth electricity	M	Lot 2 hereon	Transpower New Zealand Limited	E 11070524.13
Right to convey electricity telecommunications and computer media	W & X	Lot 2 hereon	WE Networks Limited	E 11070524.09

Certifying parties must sign or mark this box



Land Specialists
Auckland City Council

S&L Project Reference: 30378-05 – Area LUK – Stage 16

Land Registration District

South Auckland

Plan Number

DP 570351

Territorial Authority (the Council)

Hamilton City Council

Amalgamation Conditions

(Pursuant to s720 Resource Management Act 1991)

That Lot 5119 hereon (legal access) be held as to six undivided one sixth shares by the owners of Lots 8012, 8013, 8014, 8015, 8015 and 8017 hereon and individual records of title be issued in accordance therewith

That Lot 811 hereon (legal access) be held as to two undivided one half shares by the owners of Lots 455 & 456 hereon and individual records of title be issued in accordance therewith

That Lots 8001 & 8002 hereon be held in the same record of title

That Lots 8003 & 8004 hereon be held in the same record of title

That Lots 8005 & 8006 hereon be held in the same record of title

That Lots 8007 & 8008 hereon be held in the same record of title

That Lots 8009, 8010 & 8011 hereon be held in the same record of title

That Lots 8012 & 8013 hereon be held in the same record of title

That Lots 8014 & 8015 hereon be held in the same record of title

That Lots 8016 & 8017 hereon be held in the same record of title

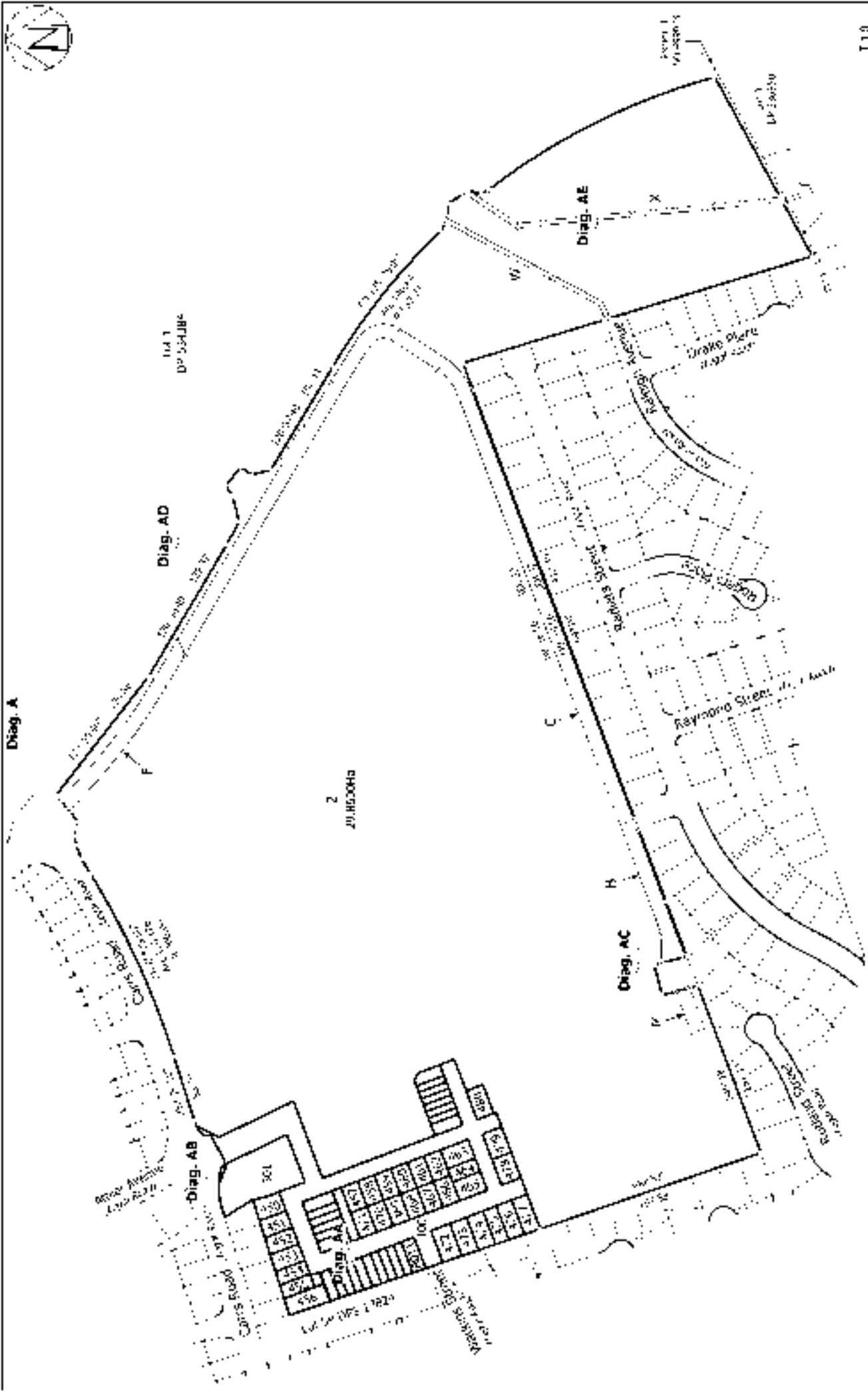
That Lots 8018 & 8019 hereon be held in the same record of title

That Lots 8020 & 8021 hereon be held in the same record of title

That Lots 8022 & 8023 hereon be held in the same record of title

That Lots 8024 & 8117 hereon be held in the same record of title

LINZ Reference 1682792 & 1958892



T 119

Title Plan
LT 570351
DRAFT

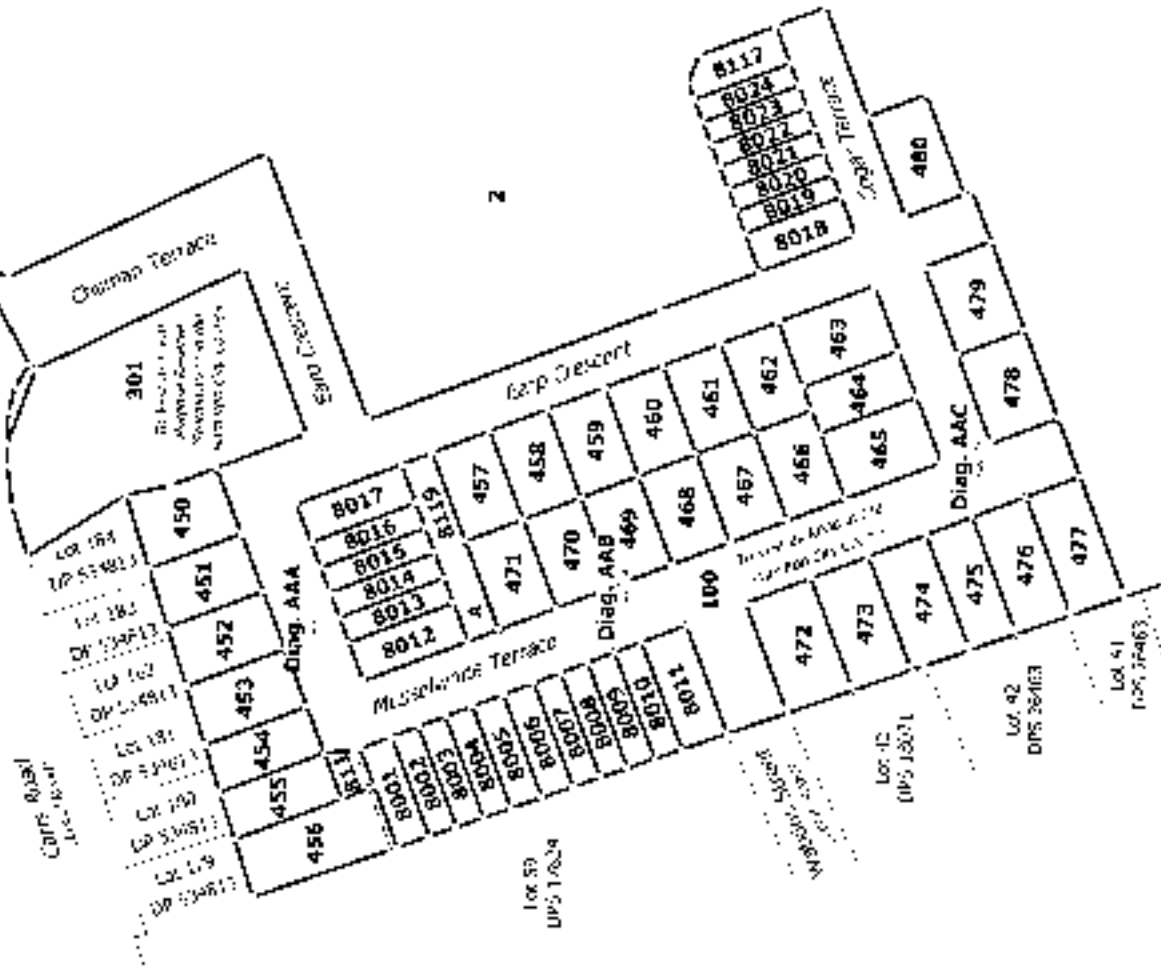
Surveyor Scot Robres Co Inc
For Easements and Easement Limited Parts

Lots 2 130, 301, 450-480, 811, 8011-8124, 8117 & 8119 Being a Subdivision of
Lot 2 DF 534384

and Owner: South American
Dually Generated Plan



Diag. AA





Diag. AAA



Title Plan
LT 570351
DRAFT

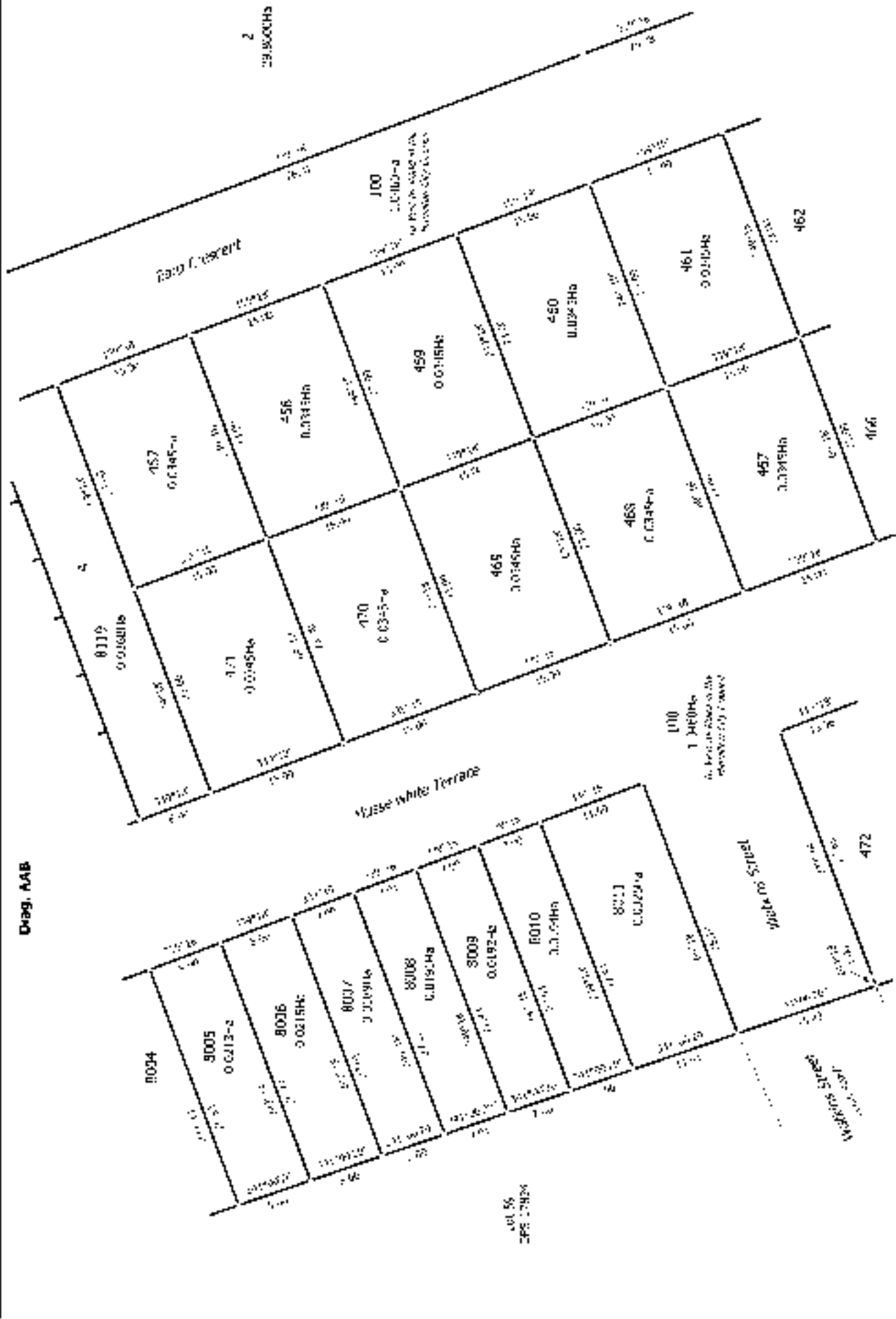
Surveyor: Scot Robey Co Inc
Plan: Earp plan and Jansh Limited Partnership

Lots 2 130, 301, 450-480, 811, 8001-8024, 8117 & 8119 Being a Subdivis on of
Lot 2 DP 534384

Land Owner: South American
DRAFT: Generated Plan
2005 01 11 10:00:00 AM



Drwg. AAB



Title Plan
LT 570351
DRAFT

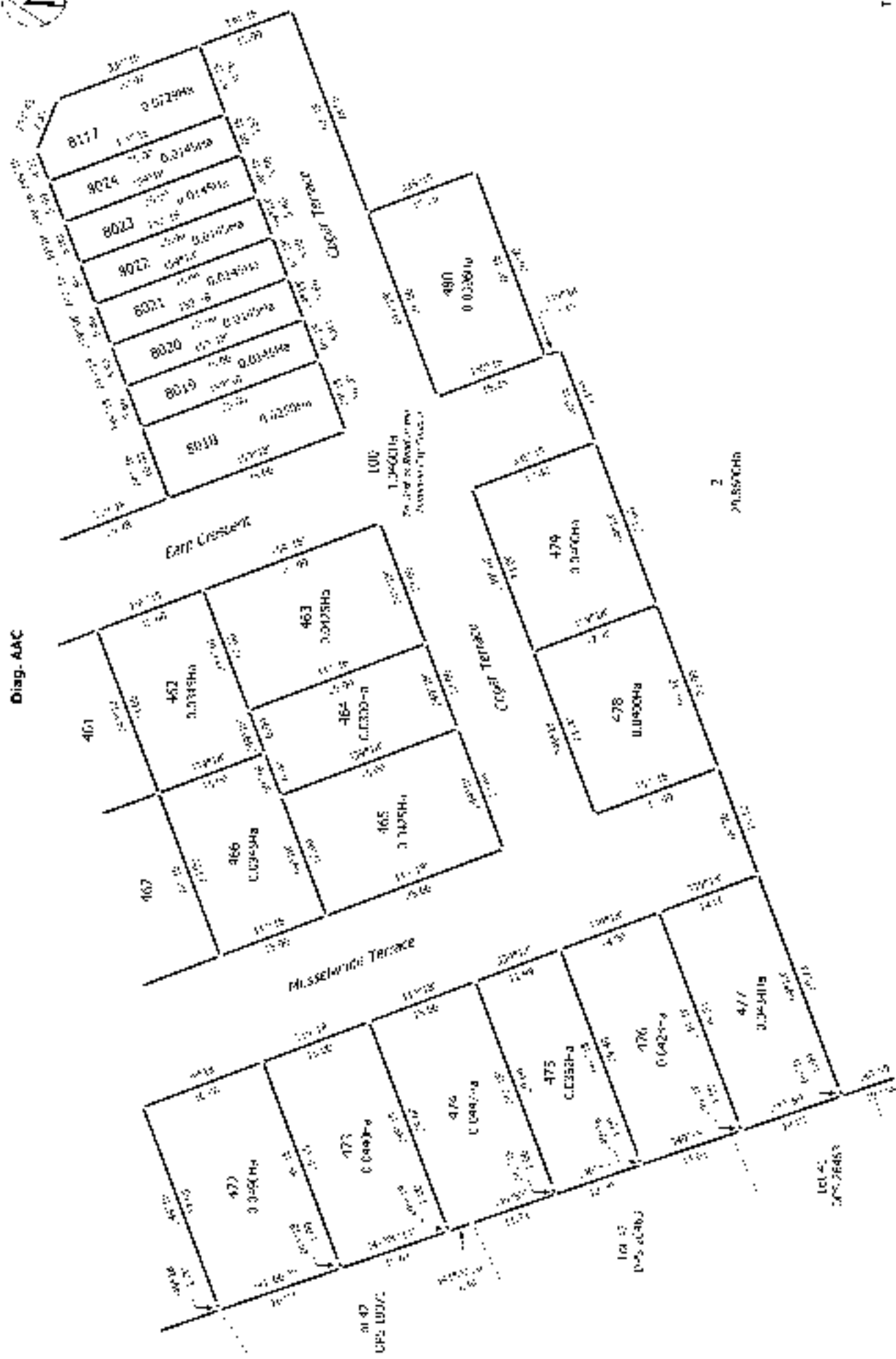
Surveyor Scot Robey Co. Inc.
For Elmplan and Jansak Limited Partnership

Lots 2 130, 301, 450-460, 811 & 8119 Being a Subdivis on of
Lot 2 DF 534384

and District South American
DRAFT



Diag. AAC



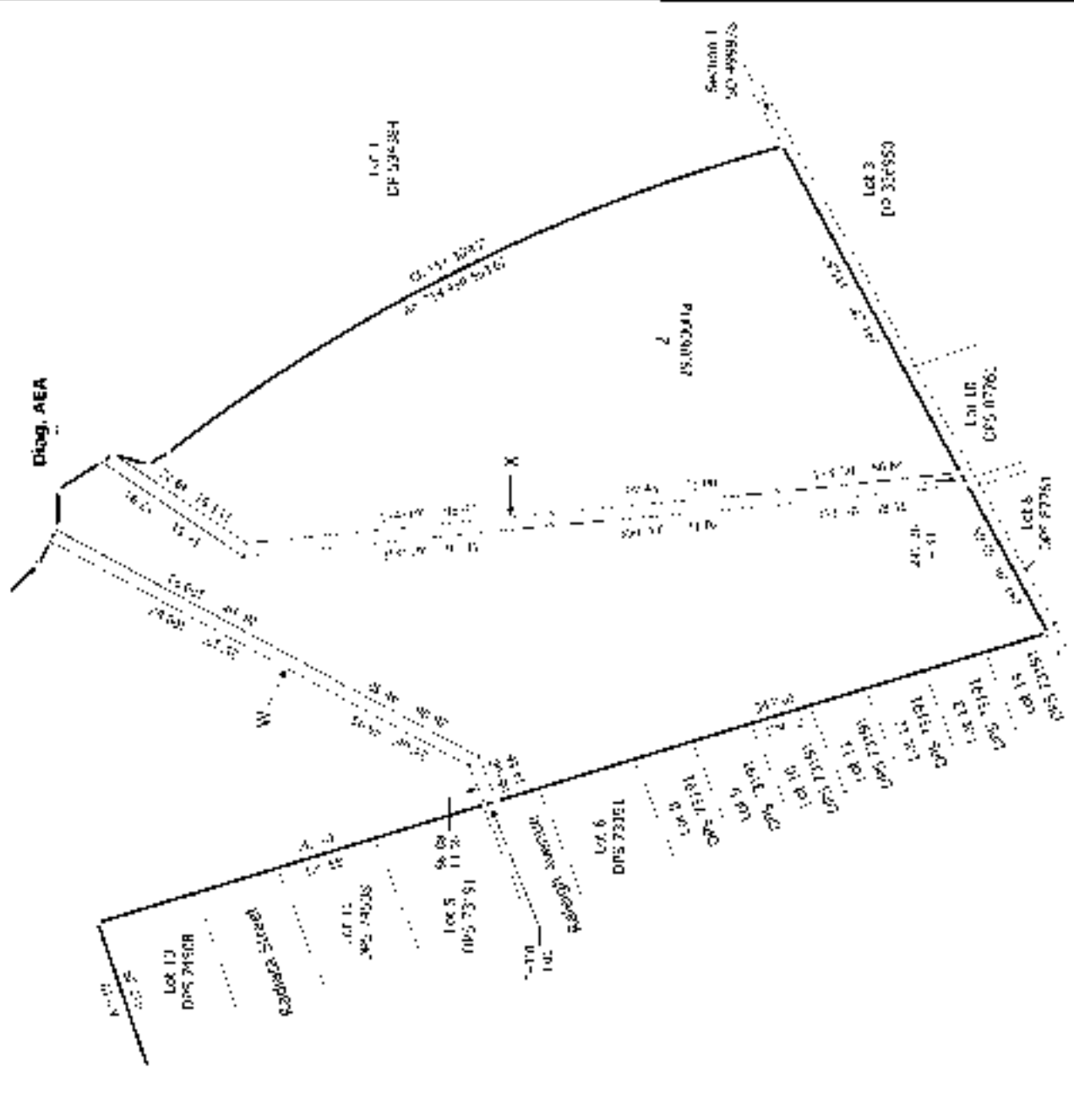
Title Plan
LT 570351
DRAFT

Surveyor Scot Robey Co Inc
For Enr-plan and Jansh Limited Partnership

Lots 2 130, 301, 450-480, 811, 8011-8124, 8117 & 8119 Being a Subdivision of
Lot 2 DF 534384

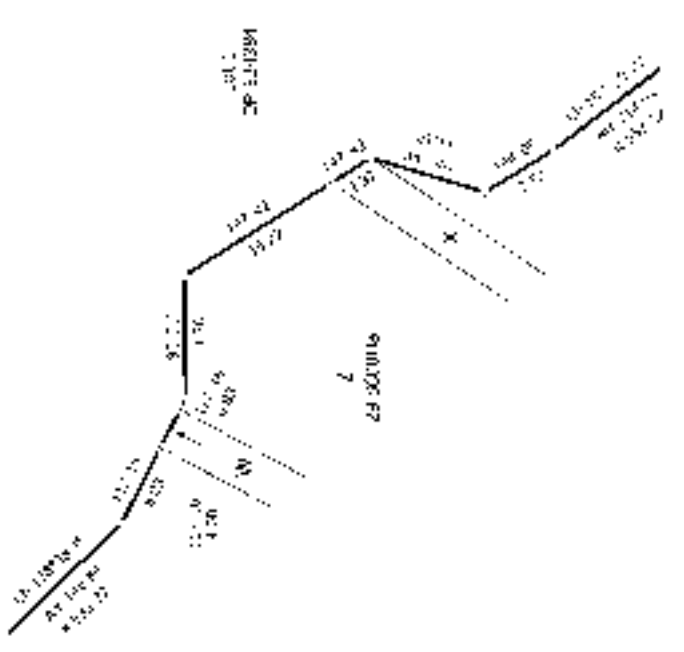
and District South American
DRAFT Generated Plan
2005 03 11 10:00 AM

Diag. AE

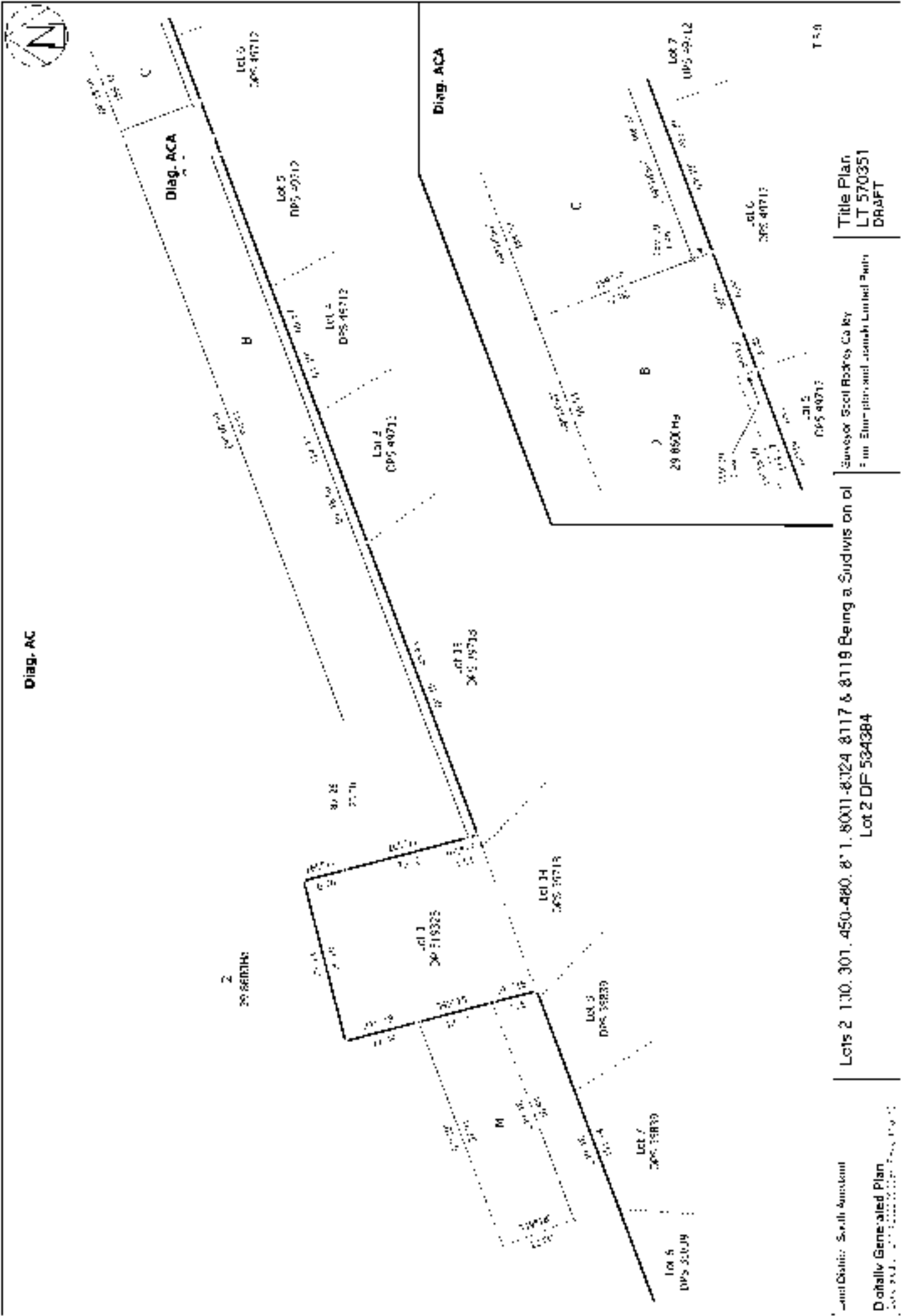


and Owner: South American
 Officially Generated Plan
 Title Plan, LT 570351
 Draft

Diag. AEA



T 79



Diag. AC

Title Plan
 LT 570351
 DRAFT

Surveyor Scot Robey Co by
 F. J. Thompson and Joseph Limited Partnership

Lots 2 130, 301, 450-460, 8' 1, 8001-8324, 8117 & 8119 Being a Subdivision of
 Lot 2 DF 534384

and District South American
 Officially Generated Plan
 2008 01 11 10:00:00 AM

SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

Hamilton City Council will use these values to record the assets once ownership has transferred following approval of s224c certification.

GENERAL DETAILS

Subdivision name: _____

Site address: _____

HCC application number: _____

DPS number(s): _____

Developer name: _____

Postal address: _____

Suburb: _____

City: _____ Postal code: _____

This information is certified as being true and correct

Completed by: Land owner Agent Other (please specify) _____

Name: _____

Signature: Barry Pearson Date signed: _____

SEND

Email this to subdivision@hcc.govt.nz. Alternatively, if you are attending a works clearance pre-application meeting, please bring this completed form with you.

SUMMARY OF LAND AND ASSETS TO VEST IN COUNCIL (excluding GST)

ASSET TYPE	COST/VALUE	REMOVE COUNCIL'S CONTRIBUTION	TOTAL VESTED
Land (A)			
Water supply (B)			
Wastewater (C)			
Stormwater (D)			
Roading (E)			
Parks (F)			
Other (G)			
TOTAL (excluding GST)			

PLANNING GUIDANCE

For general planning guidance enquiries, contact the duty planner weekdays 8am - 4.45pm.

Email: planning.guidance@hcc.govt.nz Phone: 07 838 6699

SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

LAND, WATER SUPPLY, WASTEWATER AND STORMWATER (All values are to be exclusive of GST)

LAND (A)	DPS	MEASURE (AREA M2)	COST/VALUE	COUNCIL'S CONTRIBUTION
Roading				
Recreation reserve				
Local purpose reserve				
Other - please specify				
TOTAL				
TOTAL VESTED				

WATER SUPPLY (B)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Ridermains	Metres		
Services	No.		
Hydrants	No.		
Sluice and peat valves	No.		
Other - please specify			
TOTAL			
TOTAL VESTED			

WASTEWATER (C)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Manholes	No.		
Connections	No.		
Other - please specify			
TOTAL			
TOTAL VESTED			

STORMWATER (D)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Manholes	No.		
Connections	No.		
Outfalls (inlet/outlet structures)	No.		
Wetland/rain garden planting	Area (m ²)		
Other - please specify			
TOTAL			
TOTAL VESTED			

PLANNING GUIDANCE

For general planning guidance enquiries, contact the duty planner weekdays 8am - 4.45pm.
Email: planning.guidance@hcc.govt.nz **Phone:** 07 838 6699

SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

ROADING, PARKS AND OTHER (All values are to be exclusive of GST)

ROADING (E)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Pavement	Area (m ²)		
Surfacing	Area (m ²)		
Kerb and channel (full height)	Metres		
Berms	Area (m ²)		
Footpaths (inc. walkways & cycleways)	Area (m ²)		
Vehicle crossings (excl. residential)	Area (m ²)		
Road drainage (catchpits & leads)	No.		
Street lighting	No.		
Signage	No.		
Subsoil drains	Metres		
Tactile pavers	No.		
Parking and bus bays	Area (m ²)		
Sundries (bridges/culverts/walls/etc)	No.		
Other - please specify			
TOTAL			
TOTAL VESTED			

PARKS (F)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Bollards	No.		
Landscaping (trees, shrubs)	Area (m ²)		
Paths	Area (m ²)		
Fencing	Metres		
Play equipment	No.		
Seats/benches/tables	No.		
Other - please specify			
TOTAL			
TOTAL VESTED			

OTHER (G)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Buildings	No.		
Other - please specify			
TOTAL			
TOTAL VESTED			

PLANNING GUIDANCE

For general planning guidance enquiries, contact the duty planner weekdays 8am - 4.45pm.

Email: planning.guidance@hcc.govt.nz **Phone:** 07 838 6699

Hamilton City Development Manual	
Volume 4 : Quality Systems for Land Development	Part 9 — Appendices
Authorised by : Design Services Manager	

APPENDIX 4 i)

CERTIFICATION UPON COMPLETION OF ROADS, PIPELINES AND OTHER SERVICES

ISSUED BY: Barry Pearson

(suitably qualified professional)

TO: Chedworth Properties Ltd

(Development Owner)

TO BE SUPPLIED TO: Hamilton City Council

(Territorial Authority)

IN RESPECT OF: Greenhill Park Stage 16

(Description of Development Project)

AT: Carrs Road, Chedworth, Hamilton, New Zealand

(Address)

S&L has been engaged by Chedworth Properties Ltd
(Survey Firm) *(Development Owner)*

to provide construction observation, review and certification services in respect of the above development which is described in the specification and shown on the drawings numbered ..30410-01-S16-R1 to 30410-01-S16-EW3 approved by
(Territorial Authority)

I have sighted the Hamilton City Council 011.2019.7140.003 consent and conditions of consent to the Development and the approved specification and drawings.
(Territorial Authority)

As an independent professional, I or personnel under my control, have carried out periodic reviews of the works appropriate to the engagement and based upon these reviews, information supplied by the contractor during the course of the works and the contractor's certification upon completion of the works (copy attached) I **BELIEVE ON REASONABLE GROUNDS** that the works, other than those outstanding works listed below, have been completed in accordance with the above consent and sound engineering practice.

..... Date 18/3/2022
(Signature suitably qualified Professional)

CMEngNZ, CPEng Member CSNZ NZIS
(Professional Qualifications)

..... ACENZ IPENZ
(Address)

CPEng

Outstanding Works

Nil

Hamilton City Development Manual	
Volume 4 : Quality Systems for Land Development	Part 9 — Appendices
Authorised by : Design Services Manager	

APPENDIX 4 iii)

HAMILTON CITY COUNCIL

CERTIFICATE FOR AS-BUILT DRAWINGS

Greenhill Park - Stage 16
 **DEVELOPMENT**

I, Barry Pearson, Chartered Professional Engineer/Surveyor, hereby certify that all of the information shown on the "as built" drawings and spreadsheets is correct as to location (x, y and z co-ordinates), size, materials. This applies to the following "as built" drawings:

Drawing No.	Title
30410-01-S16-WW1-Rev AB	Stage 16 Wastewater Asbuilt Plan
30410-01-S16-W1 Rev AB	Stage 16 Water Reticulation Asbuilt Plan
30410-01-S16-SW1 Rev AB	Stage 16 Stormwater Asbuilt Plan
30410-01-S16-R1-Rev AB	Stage 16 Rooding Asbuilt Plan
.....
.....

Barry Pearson

 Chartered Professional Engineer/Surveyor

18/03/2022

 Date

APPENDIX 9

As Built Drawings

- 30410-01-S16-WW1 Rev AB – Stage 16 Wastewater Asbuilt Plan
- 30410-01-S16-W1 Rev AB – Stage 16 Water Reticulation Asbuilt Plan
- 30410-01-S16-SW1 Rev AB – Stage 16 Stormwater Asbuilt Plan
- 30410-01-S16-R1 Rev AB – Stage 16 Roading Asbuilt Plan
- BM191029_130, 200 & 201, 500 to 520 & 600 Landscape and planting As Built plans



SHRIMPTON & LIPINSKI

LAND DEVELOPMENT & DESIGN SPECIALISTS

Ph. 07 577 6069
Email: info@sltga.co.nz
P.O. Box 231, Tauranga 3140

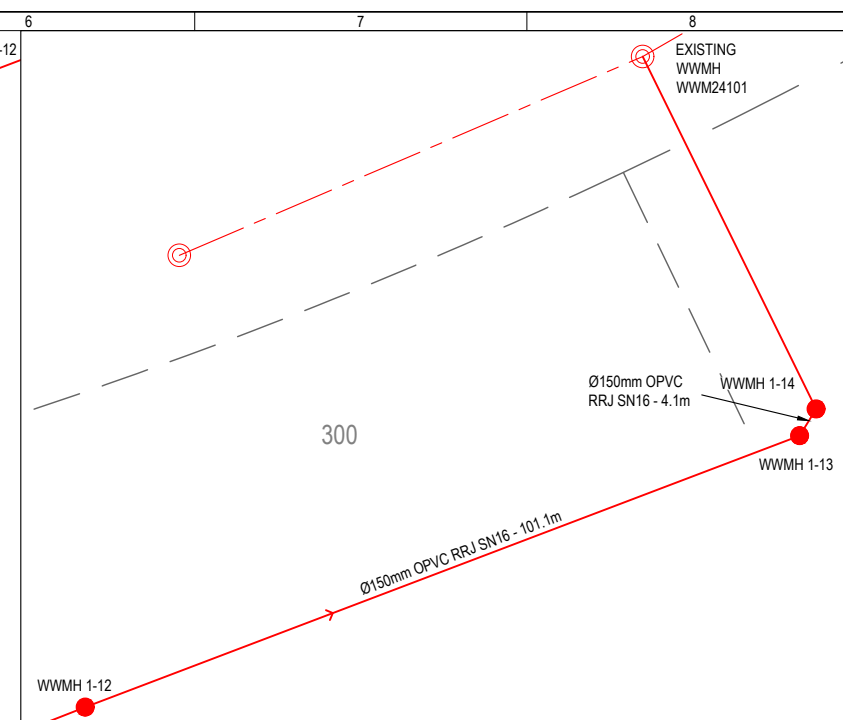
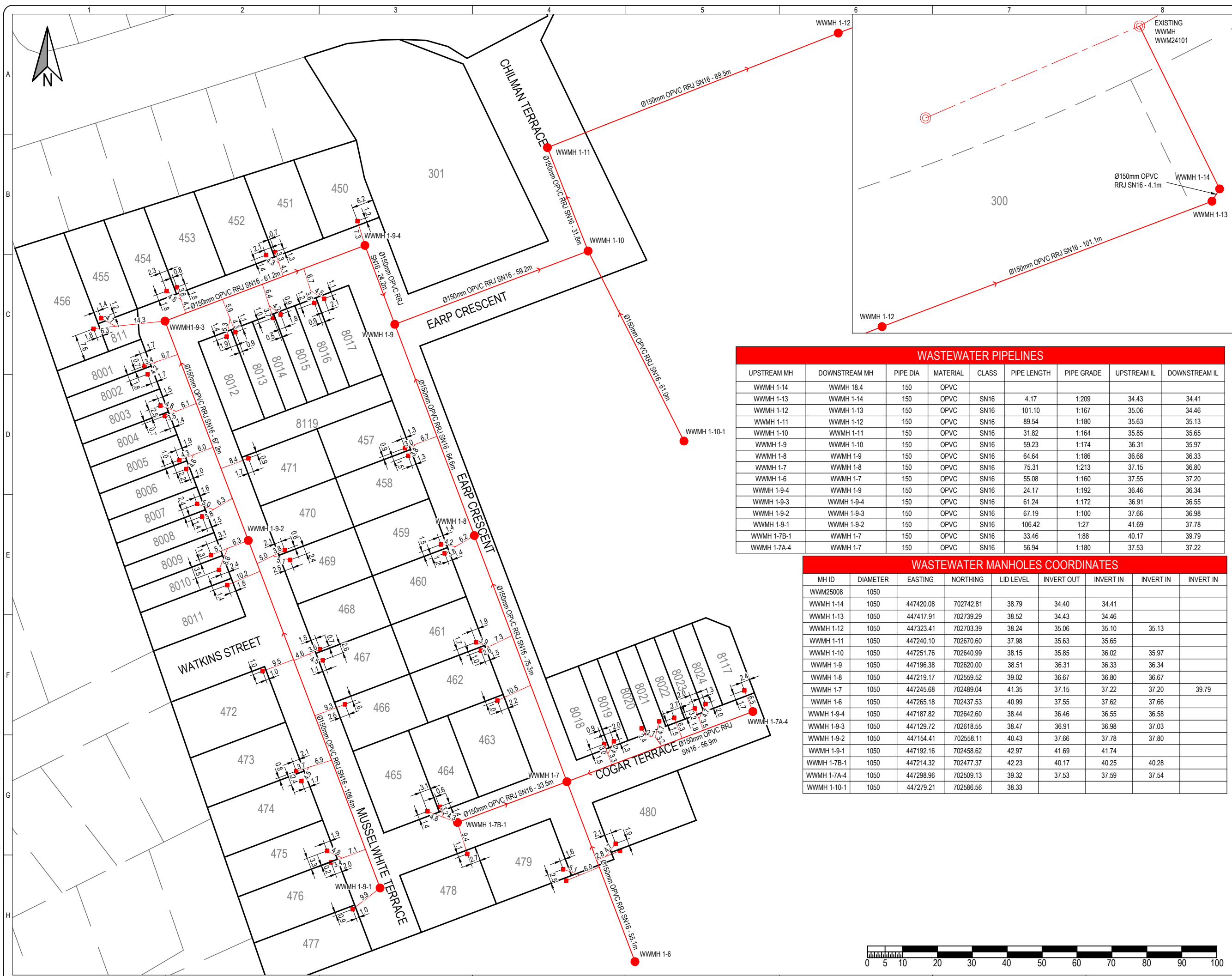
www.sltga.co.nz

NOTES:

- HCC REF: 011.2019.7140.003.
- LOT CONNECTIONS ARE Ø100 OPVC RRJ SN16 UNLESS OTHERWISE STATED.

LEGEND:

- LOT BOUNDARY
- ABUTTALS
- WASTEWATER MAIN
- WASTEWATER CONNECTION
- WASTEWATER EXISTING
- WASTEWATER MANHOLE (NEW)
- WASTEWATER MANHOLE (EXISTING)



WASTEWATER PIPELINES								
UPSTREAM MH	DOWNSTREAM MH	PIPE DIA	MATERIAL	CLASS	PIPE LENGTH	PIPE GRADE	UPSTREAM IL	DOWNSTREAM IL
WWMH 1-14	WWMH 18.4	150	OPVC					
WWMH 1-13	WWMH 1-14	150	OPVC	SN16	4.17	1:209	34.43	34.41
WWMH 1-12	WWMH 1-13	150	OPVC	SN16	101.10	1:167	35.06	34.46
WWMH 1-11	WWMH 1-12	150	OPVC	SN16	89.54	1:180	35.63	35.13
WWMH 1-10	WWMH 1-11	150	OPVC	SN16	31.82	1:164	35.85	35.65
WWMH 1-9	WWMH 1-10	150	OPVC	SN16	59.23	1:174	36.31	35.97
WWMH 1-8	WWMH 1-9	150	OPVC	SN16	64.64	1:186	36.68	36.33
WWMH 1-7	WWMH 1-8	150	OPVC	SN16	75.31	1:213	37.15	36.80
WWMH 1-6	WWMH 1-7	150	OPVC	SN16	55.08	1:160	37.55	37.20
WWMH 1-9-4	WWMH 1-9	150	OPVC	SN16	24.17	1:192	36.46	36.34
WWMH 1-9-3	WWMH 1-9-4	150	OPVC	SN16	61.24	1:172	36.91	36.55
WWMH 1-9-2	WWMH 1-9-3	150	OPVC	SN16	67.19	1:100	37.66	36.98
WWMH 1-9-1	WWMH 1-9-2	150	OPVC	SN16	106.42	1:27	41.69	37.78
WWMH 1-7B-1	WWMH 1-7	150	OPVC	SN16	33.46	1:88	40.17	39.79
WWMH 1-7A-4	WWMH 1-7	150	OPVC	SN16	56.94	1:180	37.53	37.22

WASTEWATER MANHOLES COORDINATES								
MH ID	DIAMETER	EASTING	NORTHING	LID LEVEL	INVERT OUT	INVERT IN	INVERT IN	INVERT IN
WWM25008	1050							
WWMH 1-14	1050	447420.08	702742.81	38.79	34.40	34.41		
WWMH 1-13	1050	447417.91	702739.29	38.52	34.43	34.46		
WWMH 1-12	1050	447323.41	702703.39	38.24	35.06	35.10	35.13	
WWMH 1-11	1050	447240.10	702670.60	37.98	35.63	35.65		
WWMH 1-10	1050	447251.76	702640.99	38.15	35.85	36.02	35.97	
WWMH 1-9	1050	447196.38	702620.00	38.51	36.31	36.33	36.34	
WWMH 1-8	1050	447219.17	702559.52	39.02	36.67	36.80	36.67	
WWMH 1-7	1050	447245.68	702489.04	41.35	37.15	37.22	37.20	39.79
WWMH 1-6	1050	447265.18	702437.53	40.99	37.55	37.62	37.66	
WWMH 1-9-4	1050	447187.82	702642.60	38.44	36.46	36.55	36.58	
WWMH 1-9-3	1050	447129.72	702618.55	38.47	36.91	36.98	37.03	
WWMH 1-9-2	1050	447154.41	702558.11	40.43	37.66	37.78	37.80	
WWMH 1-9-1	1050	447192.16	702458.62	42.97	41.69	41.74		
WWMH 1-7B-1	1050	447214.32	702477.37	42.23	40.17	40.25	40.28	
WWMH 1-7A-4	1050	447298.96	702509.13	39.32	37.53	37.59	37.54	
WWMH 1-10-1	1050	447279.21	702586.56	38.33				

Rev	DESCRIPTION	DRN	CKD	APP	DATE
AB	ISSUED FOR 224 CERT.	NW	CK	GDC	03/22

SURVEYED	CK	DATE	DESIGNED	NAME	DATE
		03/22			

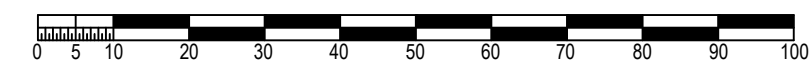
COORDINATE SYSTEM: NZGD 2000 - MT. EDEN CIRCUIT
ORIGIN OF COORDINATES: SS507 SO 42451
HEIGHT DATUM: MOTURIKI LVD 1953
ORIGIN OF HEIGHT: SS507 SO 42451 RL: 44.04m

TITLE

STAGE 16 WASTEWATER AS-BUILT PLAN



ORIGINAL SCALES @ A3	STATUS
1:1000	AS-BUILT
DO NOT SCALE DIMENSIONS	
DRAWING NO	REVISION
30410-01-S16-WW1	AB



H:\0000 - H Drive\wood\AutoCAD\30410 - Stage 16 As-built\dwg - Stage 16 As-built.dwg - Plotted: 18/03/2022

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SLUICE VALVES		
VALVE ID	EASTING	NORTHING
SV16.1	447259.44	702649.34
SV16.2	447265.16	702646.17
SV16.3	447187.49	702623.85
SV16.4	447153.97	702538.97
SV16.5	447153.19	702534.96
SV16.6	447160.83	702521.41
SV16.7	447179.41	702471.91
SV16.8	447193.28	702473.34
SV16.9	447196.85	702460.36
SV16.10	447234.62	702488.43
SV16.11	447237.16	702492.03
SV16.12	447253.52	702495.89

PEET VALVES		
VALVE ID	EASTING	NORTHING
PV16.1	447192.04	702604.68
PV16.2	447158.70	702523.35
PV16.3	447192.12	702474.36
PV16.4	447252.78	702484.21

FIRE HYDRANTS		
HYDRANT ID	EASTING	NORTHING
FH 16.1	447252.42	702668.39
FH 16.2	447133.31	702594.66
FH 16.3	447150.34	702533.86
FH 16.4	447216.44	702547.19
FH 16.5	447293.29	702511.11


SHRIMPTON & LIPINSKI
 LAND DEVELOPMENT &
 DESIGN SPECIALISTS
 Ph. 07 577 6069
 Email: info@sltga.co.nz
 P.O. Box 231, Tauranga 3140
 www.sltga.co.nz

- NOTES:**
- HCC REF: 011.2019.7140.003.
 - WATERMANS PLOTTED FROM DATA SUPPLIED BY ONLINE CONTRACTORS.

- LEGEND:**
- LOT BOUNDARY
 - ABUTTALS
 - EXISTING WATERMAIN
 - WATERMAIN
 - RIDERMAIN
 - ✚ VALVE (NEW)
 - ✚ VALVE (EXISTING)
 - H FIRE HYDRANT
 - M WATER METER

Rev	DESCRIPTION	DRN	CKD	APP	DATE
AB	ISSUED FOR 224 CERT.	NW	CK	GDC	03/22

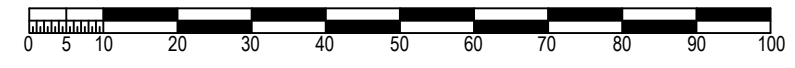
NAME	DATE	NAME	DATE
SURVEYED	CK 03/22	DESIGNED	

COORDINATE SYSTEM: NZGD 2000 - MT. EDEN CIRCUIT
 ORIGIN OF COORDINATES: SS507 SO 42451
 HEIGHT DATUM: MOTURIKI LVD 1953
 ORIGIN OF HEIGHT: SS507 SO 42451 RL: 44.04m
STAGE 16 WATER AS-BUILT PLAN

PREPARED FOR



ORIGINAL SCALES @ A3	STATUS
1:1000	AS-BUILT
DO NOT SCALE DIMENSIONS	
DRAWING NO	REVISION
30410-01-S16-W1	AB



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STORMWATER MANHOLES COORDINATES

MH ID	DIA	EASTING	NORTHING	LID LEVEL	INVERT OUT	INVERT IN	INVERT IN	INVERT IN
SWMH A3	1050	447183.65	702638.84	38.23	35.74	36.47	36.74	35.83
SWMH A2	1050	447130.55	702620.92	38.47	36.33	37.15	36.41	36.35
SWMH A1	1050	447098.52	702607.15	37.67	UNABLE TO SURVEY			
SWMH A2-3	1050	447141.67	702585.82	39.38	37.47		38.06	37.55
SWMH A2-2	1050	447161.86	702532.07	41.48	39.17	39.97	39.32	39.66
SWMH A2-1	1050	447179.83	702484.59	42.65	41.07	41.26	41.11	
SWMH B5	1050	447235.18	702549.80	38.50	BLOCKED	35.76		
SWMH B4	1050	447222.23	702545.15	39.19	35.94	36.22	37.86	36.38
SWMH B3	1050	447232.48	702517.52	40.25	36.81	37.31	37.48	38.32
SWMH B2	1050	447244.53	702486.29	41.35	38.68	39.89	39.97	39.98
SWMH B1	1050	447195.27	702467.65	43.01	41.29	41.38		
SWMH B3-1	1050	447280.57	702535.34	39.34	37.75	37.77	37.78	
SWMH B4-1	1050	447201.76	702599.65	38.62	36.93	36.98	37.13	37.26
SWMH D7	1050	447277.12	702565.73	38.64	35.46	35.61		
SWMH D6	1050	447289.05	702569.74	38.70	35.64	35.68		
SWMH D6-6	1050	447275.12	702602.29	38.27	35.77	35.78		
SWMH D6-5	1050	447259.67	702633.79	38.25	35.83	37.05	37.03	35.92
SWMH D6-4	1050	447244.65	702665.06	38.00	36.11	36.80	36.19	36.82
SWMH D6-3	1050	447246.26	702671.86	38.10	36.18	36.26	36.97	
SWMH D6-4-1	1050	447230.27	702695.24	37.80	36.41	36.44	36.46	
SWMH E1	1050	447233.65	702618.66	37.56	UNABLE TO SURVEY			

STORMWATER PIPELINES

UPSTREAM MH	DOWNSTREAM MH	PIPE DIA	MATERIAL	CLASS	PIPE LENGTH	PIPE GRADE	UPSTREAM IL	DOWNSTREAM IL
SWMH A3	SWOUT A4	525	RCRRJ					
SWMH A2	SWMH A3	525	RCRRJ	SN16	57.63	1:115	36.33	35.83
SWMH A1	SWMH A2	450	RCRRJ	SN16		1:		
SWMH A2-3	SWMH A2	375	RCRRJ	SN16	34.85	1:33	37.47	36.41
SWMH A2-2	SWMH A2-3	375	RCRRJ	SN16	57.38	1:35	39.17	37.55
SWMH A2-1	SWMH A2-2	300	PVC	SN16	50.81	1:29	41.07	39.32
SWMH B5	SWOUT B6	450	RCRRJ	SN16				
SWMH B4	SWMH B5	450	RCRRJ	SN16	13.73	1:79	35.94	35.76
SWMH B3	SWMH B4	375	RCRRJ	SN16	29.48	1:51	36.81	36.22
SWMH B2	SWMH B3	300	PVC	SN16	33.48	1:28	38.68	37.48
SWMH B1	SWMH B2	225	PVC	SN16	52.67	1:25	41.29	39.17
SWMH B3-1	SWMH B3	300	PVC	SN16	51.29	1:117	37.75	37.31
SWMH B4-1	SWMH B4	300	PVC	SN16	58.22	1:105	36.93	36.38
SWMH D7	SWOUT D8	450	RCRRJ	SN16	17.13	1:73	35.44	35.20
SWMH D6	SWMH D7	375	RCRRJ	SN16	12.59	1:155	35.64	35.56
SWMH D6-6	SWMH D6	375	RCRRJ	SN16	34.41	1:366	35.77	35.68
SWMH D6-5	SWMH D6-6	375	RCRRJ	SN16	35.09	1:608	35.83	35.78
SWMH D6-4	SWMH D6-5	375	RCRRJ	SN16	34.69	1:184	36.11	35.92
SWMH D6-3	SWMH D6-4	375	RCRRJ	SN16	6.99	1:466	36.19	36.18
SWMH D6-4-1	SWMH D6-4	375	RCRRJ	SN16	33.44	1:149	36.41	36.19
SWMH E1	SWOUT E2	525	RCRRJ	SN16	27.65	1:121	35.14	34.91

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SHRIMPTON & LIPINSKI
 LAND DEVELOPMENT & DESIGN SPECIALISTS
 Ph. 07 577 6069
 Email: info@sltga.co.nz
 P.O. Box 231, Tauranga 3140
 www.sltga.co.nz

- NOTES:**
- HCC REF: 011.2019.7140.003.
 - ALL SINGLE CATCHPIT LEADS ARE Ø225 DIA RCRRJ CLASS 4 UNLESS OTHERWISE STATED. 2. ALL DOUBLE CATCHPIT LEADS ARE Ø300 DIA RCRRJ CLASS 4 UNLESS OTHERWISE STATED.
 - LOT CONNECTIONS ARE Ø100 FOR SINGLE AND Ø150 FOR DOUBLE UNLESS OTHERWISE STATED.

- LEGEND:**
- LOT BOUNDARY
 - ABUTTALS
 - OVERLAND FLOWPATH
 - STORMWATER MAIN
 - STORMWATER CONNECTION
 - STORMWATER EXISTING
 - STORMWATER MANHOLE (NEW)
 - STORMWATER MANHOLE (EXISTING)
 - CATCHPIT (CP)
 - DOUBLE CATCHPIT (DCP)
 - OUTLET

Rev	DESCRIPTION	DRN	CKD	APP	DATE
AB	ISSUED FOR 224 CERT.	NW	CK	GDC	03/22

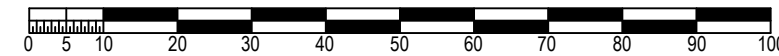
NAME	DATE	NAME	DATE
SURVEYED	CK 03/22	DESIGNED	

COORDINATE SYSTEM: NZGD 2000 - MT. EDEN CIRCUIT
 ORIGIN OF COORDINATES: SS507 SO 42451
 HEIGHT DATUM: MOTURIKI LVD 1953
 ORIGIN OF HEIGHT: SS507 SO 42451 RL: 44.04m

**STAGE 16
 STORMWATER
 AS-BUILT PLAN**

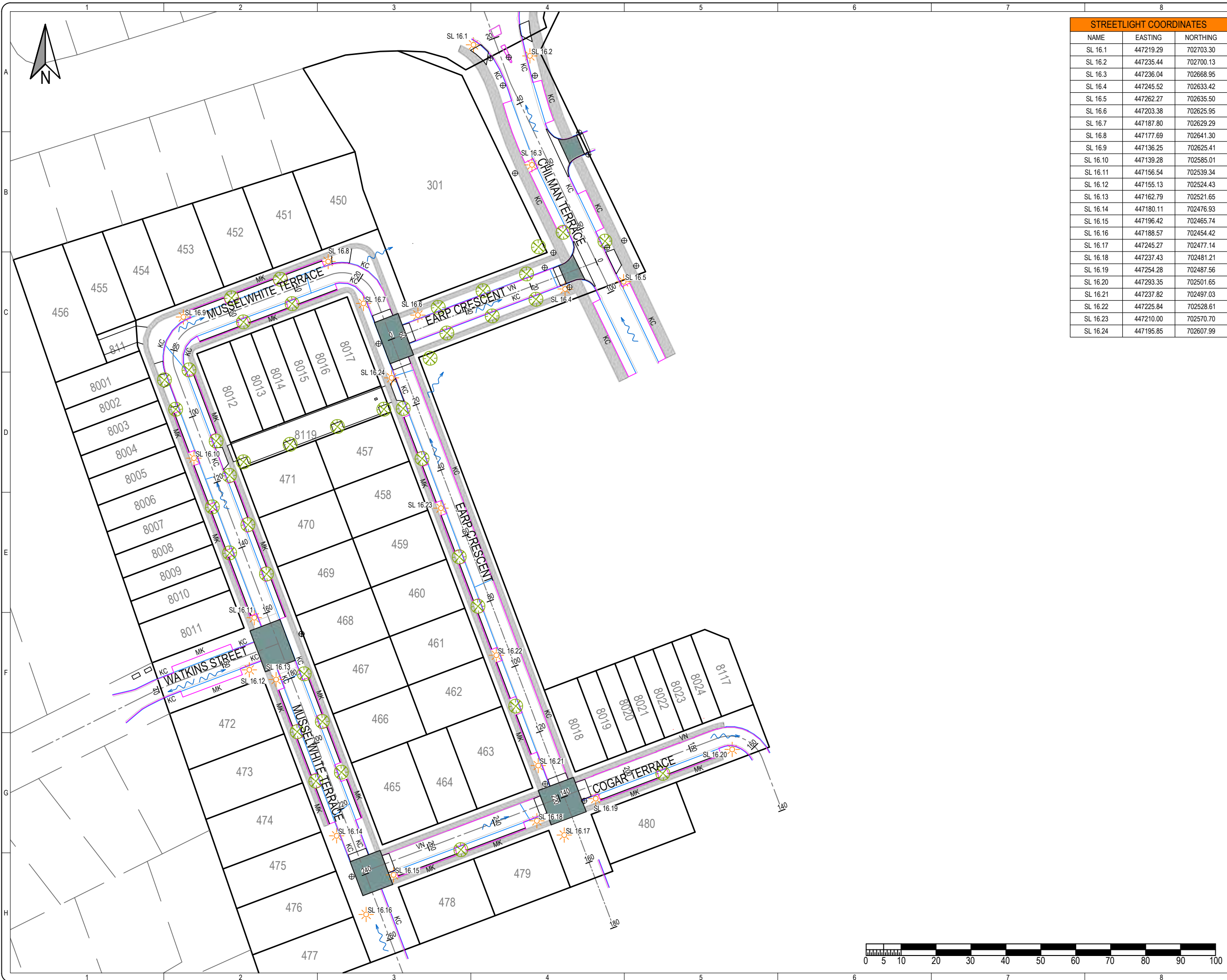
PREPARED FOR

ORIGINAL SCALES @ A3 STATUS
 1:1000 AS-BUILT
 DO NOT SCALE DIMENSIONS
 DRAWING NO: 30410-01-S16-SW1
 REVISION: AB



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STREETLIGHT COORDINATES		
NAME	EASTING	NORTHING
SL 16.1	447219.29	702703.30
SL 16.2	447235.44	702700.13
SL 16.3	447236.04	702668.95
SL 16.4	447245.52	702633.42
SL 16.5	447262.27	702635.50
SL 16.6	447203.38	702625.95
SL 16.7	447187.80	702629.29
SL 16.8	447177.69	702641.30
SL 16.9	447136.25	702625.41
SL 16.10	447139.28	702585.01
SL 16.11	447156.54	702539.34
SL 16.12	447155.13	702524.43
SL 16.13	447162.79	702521.65
SL 16.14	447180.11	702476.93
SL 16.15	447196.42	702465.74
SL 16.16	447188.57	702454.42
SL 16.17	447245.27	702477.14
SL 16.18	447237.43	702481.21
SL 16.19	447254.28	702487.56
SL 16.20	447293.35	702501.65
SL 16.21	447237.82	702497.03
SL 16.22	447225.84	702528.61
SL 16.23	447210.00	702570.70
SL 16.24	447195.85	702607.99


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 P.O. Box 231, Tauranga 3140
 www.sltga.co.nz

NOTES:
 1. HCC REF: 011.2019.7140.003.

- LEGEND:**
- LOT BOUNDARY
 - ABUTTALS
 - EDGE OF SEAL
 - KERB AND CHANNEL
 - MOUNTABLE KERB
 - VERTICAL NIB
 - RAISED CONCRETE
 - SUBSOIL DRAINS
 - FOOTPATH
 - STREETLIGHT
 - TREE
 - OVERLAND FLOWPATH
 - ROAD SIGN
 - ROAD CENTRELINE

Rev	DESCRIPTION	DRN	CKD	APP	DATE
AB	ISSUED FOR 224 CERT.	NW	CK	GDC	03/22

NAME	DATE	NAME	DATE
SURVEYED	CK 03/22	DESIGNED	

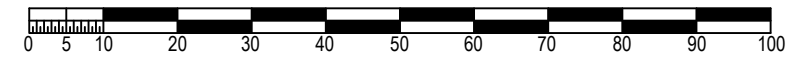
COORDINATE SYSTEM: NZGD 2000 - MT. EDEN CIRCUIT
 ORIGIN OF COORDINATES: SS507 SO 42451
 HEIGHT DATUM: MOTURIKI LVD 1953
 ORIGIN OF HEIGHT: SS507 SO 42451 RL: 44.04m

**STAGE 16
 ROADING
 AS-BUILT PLAN**

PREPARED FOR



ORIGINAL SCALES @ A3	STATUS
1:1000	AS-BUILT
DO NOT SCALE DIMENSIONS	
DRAWING NO	REVISION
30410-01-S16-R1	AB



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Greenhill Park Area KL&U Stage 16

PROJECT NUMBER: **BM191029**

AS BUILT

PROJECT ADDRESS: Carrs Road
Chartwell
Hamilton 3210

CLIENT: **Chedworth Properties Limited**

CLIENT ADDRESS: H.G Webb House
1110 Victoria Street
(Corner of Victoria Street and Boundary Road)
Hamilton 3200

CONSULTANTS: **S&L Consultants
IBEX Lighting**



Boffa Miskell Limited
Level 3, SouthBloc
140 Anglesea Street
Hamilton 3240
New Zealand
Tel: +64 7 960 0006
www.boffamiskell.co.nz

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	09.02.22	ISSUED FOR CONSTRUCTION
2	11.02.22	ISSUED FOR CONSTRUCTION
3	17.03.22	AS BUILT

SHEET INDEX

100 Preliminary & General

- 100 Cover Sheet
- 130 Key Sheet

200 Plans

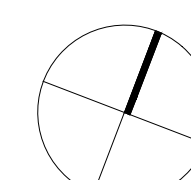
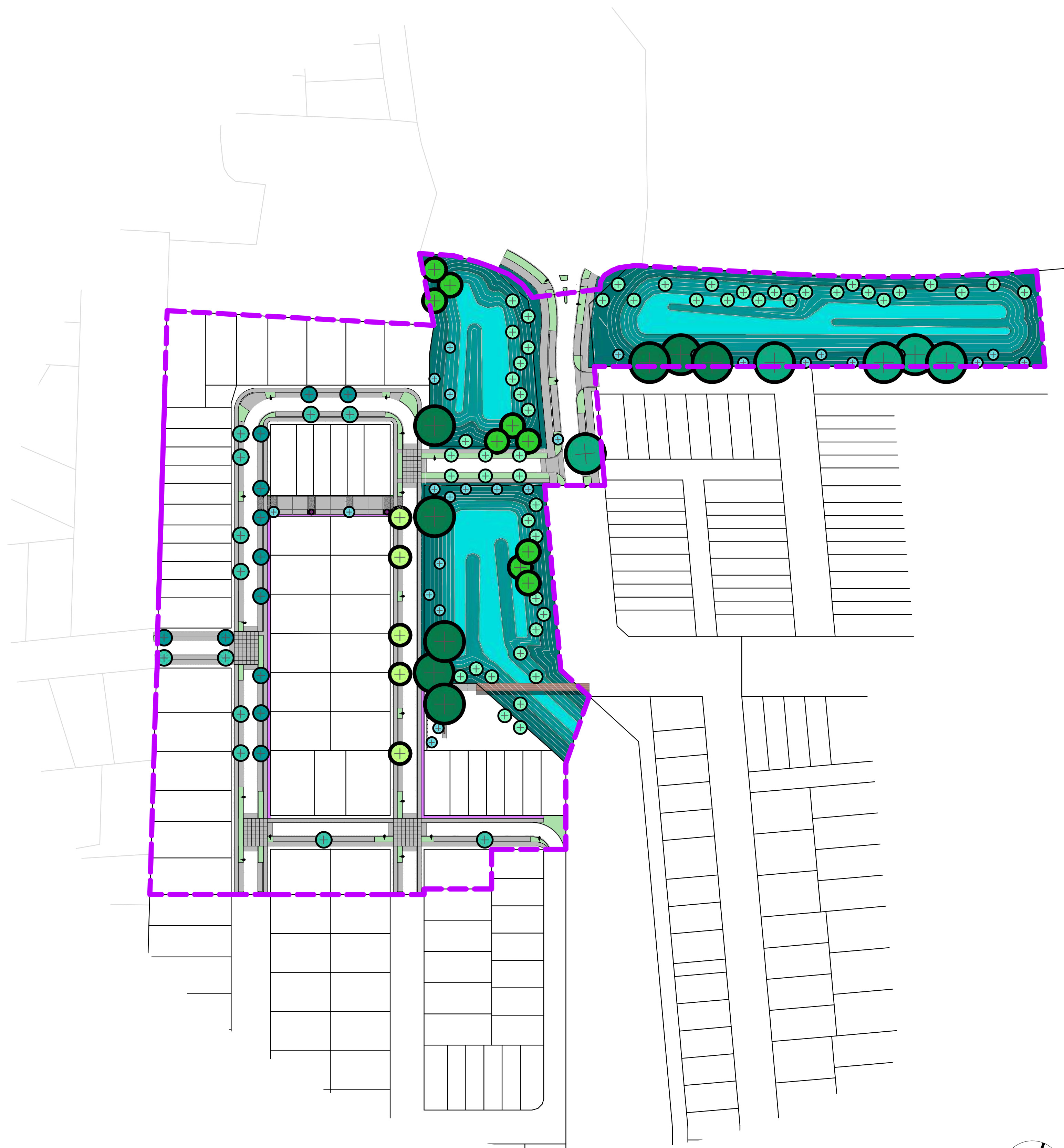
- 200 Sheet Locations
- 201 General Arrangement Sheet 01

500 Plans

- 500 Planting Schedule
- 501 Planting Plan General Arrangement
- 502 Planting Plan Sheet Locations
- 503 Planting Plan Sheet 01
- 504 Planting Plan Sheet 02
- 505 Planting Plan Sheet 03
- 506 Planting Plan Sheet 04
- 507 Planting Plan Sheet 05
- 508 Planting Plan Sheet 06
- 509 Planting Plan Sheet 07
- 510 Planting Plan Sheet 08
- 511 Planting Plan Sheet 09
- 512 Planting Plan Sheet 10
- 513 Planting Plan Sheet 11
- 514 Planting Plan Sheet 12
- 515 Planting Plan Sheet 13
- 516 Planting Plan Sheet 14
- 517 Planting Plan Sheet 15
- 518 Planting Plan Sheet 16
- 519 Planting Plan Sheet 17
- 520 Planting Plan Sheet 18

600 Details

- 600 Details Sheet 01



GENERAL NOTES

All drawings shall be read in conjunction with the Landscape Specifications and other Consultant's Drawings and Specifications.

The Contractor is responsible for confirming the location of all underground services on site prior to commencing work.

Drawings shall not be scaled. Use dimensioned measurements only.

The Contractor shall verify all dimensions on site prior to commencing work.

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KEY NOTES

PAVING

THE FOLLOWING NOTES RELATE TO THE AESTHETIC QUALITIES AND FINISH OF THE MATERIAL ONLY. REFER CIVIL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL OTHER INFORMATION.

- P01** PAVING TYPE 1
Dark-grey insitu concrete paving with a soft-bristled broom finish.
SPECIFICATION SECTION: 3124

JOINTS

REFER CIVIL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL CONSTRUCTION JOINTS, EXPANSION JOINTS, CONTROL JOINTS AND DECORATIVE SAW CUTS.

EDGING

THE FOLLOWING NOTES RELATE TO THE AESTHETIC QUALITIES AND FINISH OF THE MATERIAL ONLY. REFER CIVIL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL OTHER INFORMATION.

- E01** INSITU CONCRETE MOWING STRIP
150mm wide dark-grey insitu concrete mowing strip with a soft-bristled broom finish.
SPECIFICATION SECTION: 8410
- E02** INSITU CONCRETE MOWING STRIP
200mm wide dark-grey insitu concrete mowing strip with a soft-bristled broom finish.
SPECIFICATION SECTION: 8410
- E03** INSITU CONCRETE MOWING STRIP
450mm wide dark-grey insitu concrete mowing strip with a soft-bristled broom finish.
SPECIFICATION SECTION: 8410
- E04** INSITU CONCRETE MOWING STRIP
1.5m wide dark-grey insitu concrete mowing strip with a soft-bristled broom finish.
SPECIFICATION SECTION: 8410

KERBS

REFER CIVIL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL KERBS.

DRAINAGE

REFER CIVIL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL DRAINAGE.

STRUCTURES

REFER STRUCTURAL ENGINEERING DRAWINGS AND SPECIFICATIONS FOR ALL INFORMATION.

- S01** BOARDWALK BRIDGE

FURNITURE

- F01** SEAT
Santa & Cole Trapecio Seat.
SPECIFICATION SECTION: 8461
- F02** LITTER BIN
Milford Bin.
SPECIFICATION SECTION: 8461
- F03** BOLLARD
Timber bollard with black stain finish.
SPECIFICATION SECTION: 8461
- F04** REMOVABLE LOCKABLE BOLLARD
Removable-lockable timber bollard with black stain finish.
SPECIFICATION SECTION: 8461
- F05** WHEEL STOP
Wynyard Wheel Stop.
SPECIFICATION SECTION: 8461

VEGETATION

- V01** PLANTING
Herbs, sedges and shrubs with mulch.
REFER DETAIL: 3/600
SPECIFICATION SECTION: 8310, 8321, 8332

- V02** GRASS
Seeded grass area.
REFER DETAIL: 4/600
SPECIFICATION SECTION: 8333

TREES

- T01** STREET TREE PIT
REFER DETAIL: 1/600
SPECIFICATION SECTION: 8310, 8321, 8332

- T02** RESERVE TREE PIT
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.
REFER DETAIL: 2/600
SPECIFICATION SECTION: 8310, 8321, 8332

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

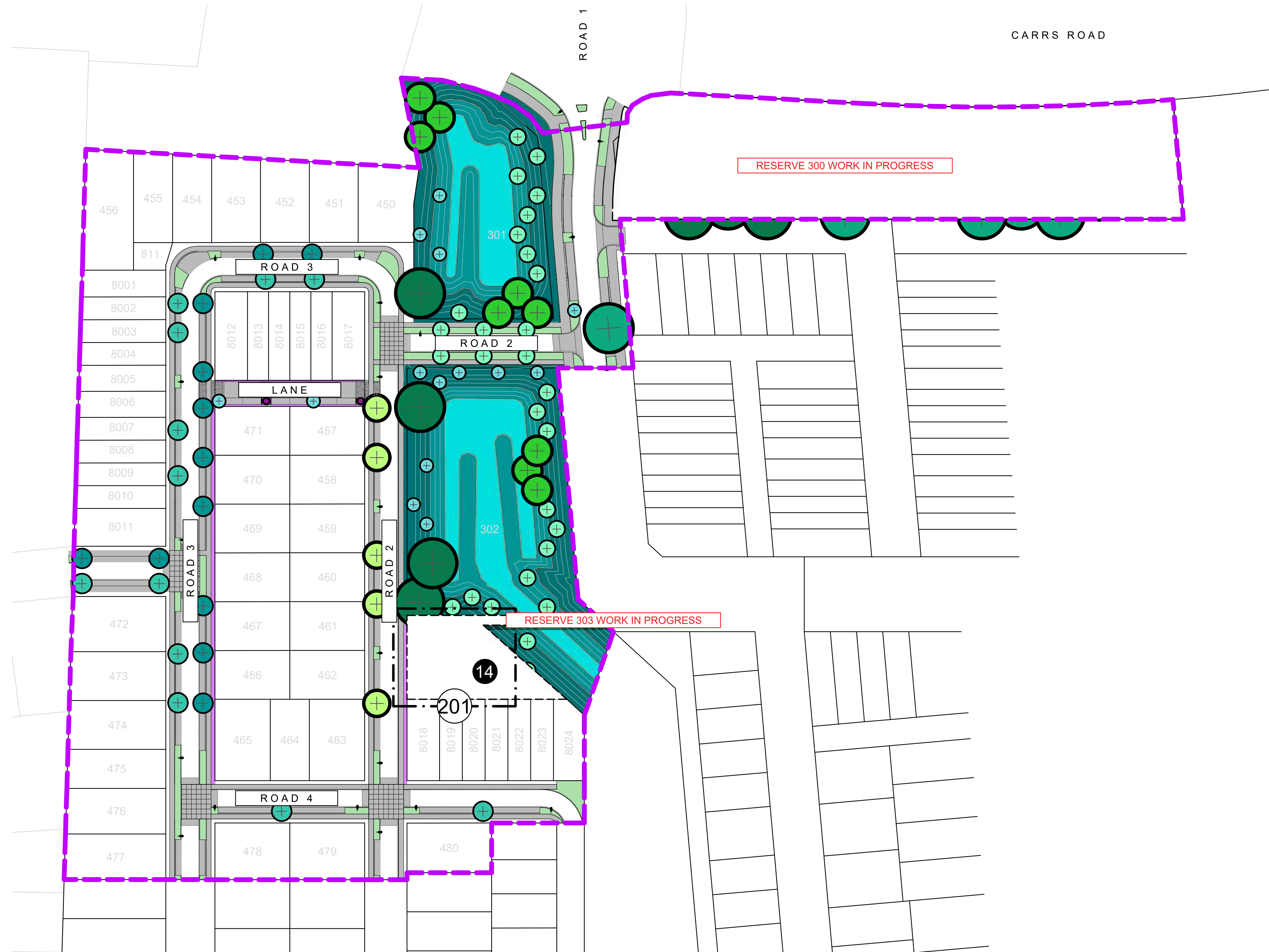
KEY SHEET

Design	ARo	Scale	Date
Drawn	ARo	Not to Scale	17.11.21
Check			
App'v'd			

DRAWING NO. REVISION

BM191029_130

1



NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;
 CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;
 FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

- REFER TO DRAWING NUMBER BM191029_130 KEY SHEET
- STAGE 16
 - PLANTING
 - LAWN

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	09.02.22	ANNOTATION ADDED FOR PARK NUMBER 14
2	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
3	17.03.22	AS BUILT

CLIENT
 Chedworth Properties Ltd

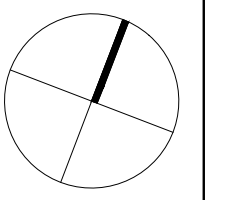
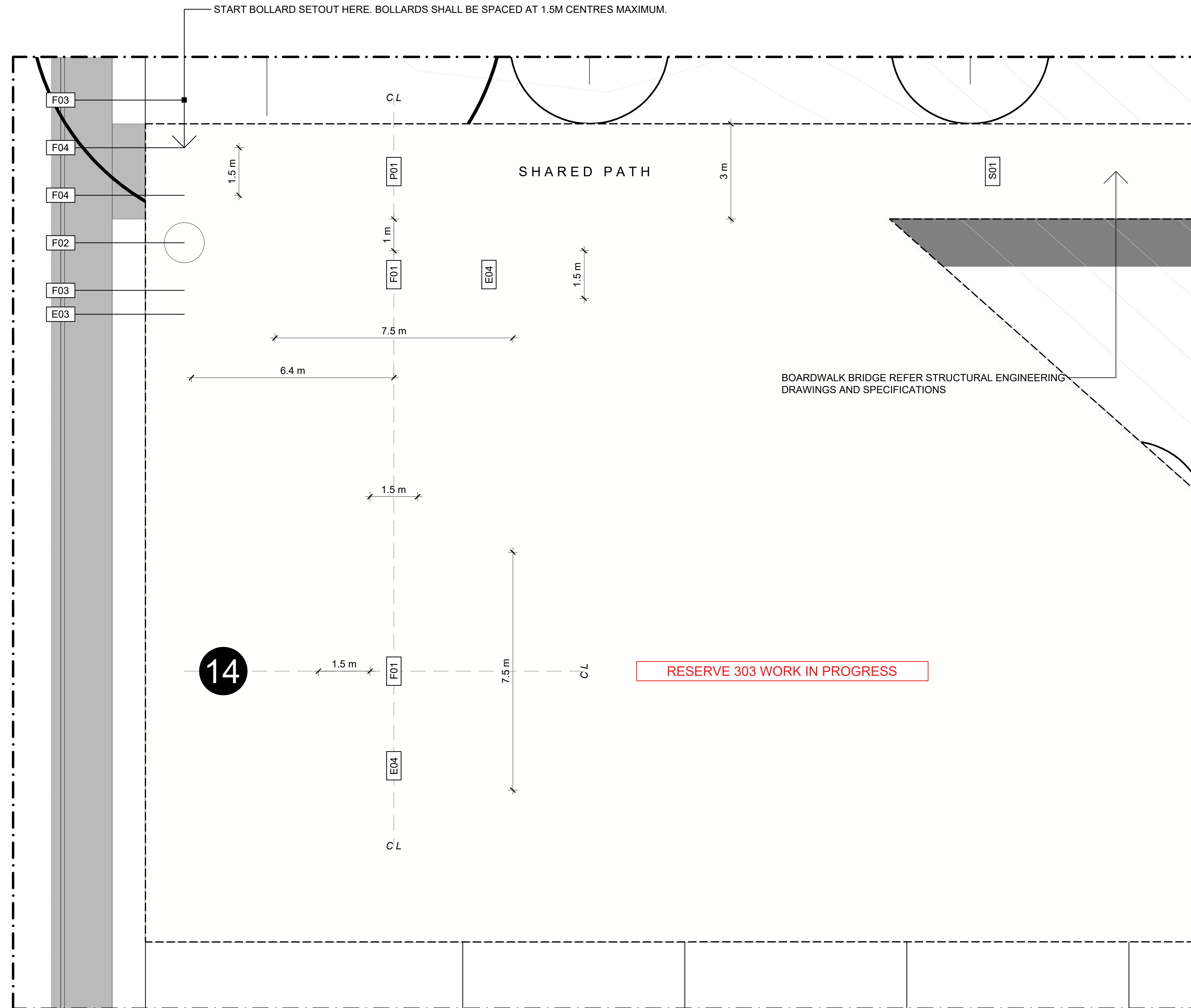
CONSULTANTS
 S&L Consultants
 IBEX Lighting

AS BUILT

**GREENHILL PARK
 AREA KL&U
 STAGE 16**
 SHEET LOCATIONS

Design	ARo	Scale	Date
Drawn	ARo	1:750 @ A1	17.11.21
Check		1:1,500 @ A3	
App'vd			

DRAWING NO.	REVISION
BM191029_200	3



NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;
 CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;
 FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

- REFER TO DRAWING NUMBER BM191029_130 KEY SHEET
- STAGE 16
- PARK 14
- CONCRETE CONTROL JOINTS
- LAWN

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	09.02.22	ANNOTATION ADDED FOR PARK NUMBER 14
2	17.03.22	AS BUILT

CLIENT
 Chedworth Properties Ltd

CONSULTANTS
 S&L Consultants
 IBEX Lighting

AS BUILT

**GREENHILL PARK
 AREA KL&U
 STAGE 16**
 GENERAL ARRANGEMENT
 SHEET 01 OF 01

Design	ARo	Scale	Date
Drawn	ARo	1:125 @ A1	17.11.21
Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_201	2

Planting Schedule						
Collector Street						
Botanical Name	Common Name	Evergreen	Deciduous	Size	Centres (m)	Quantity
Specimen Trees						
<i>Fagus sylvatica</i>	European beech		•	100-180L	As shown	1
<i>Knights excelsa</i>	rewarewa	•		100-180L	As shown	1
Berm Planting						
<i>Carex testacea</i>	orange sedge	•		1L	0.5	371
<i>Hebe 'Win Mt'</i>	koromiko, hebe cultivar	•		1L	0.75	8
Planting Area						270m ²
Mulch						27m ³
Local Street						
Botanical Name	Common Name	Evergreen	Deciduous	Size	Centres (m)	Quantity
Specimen Trees						
<i>Acer rubrum</i>	American red maple		•	100-180L	As shown	5
<i>Sophora microphylla</i>	kōwhiri	•		100-180L	As shown	6
Berm Planting						
<i>Carex testacea</i>	orange sedge	•		1L	0.5	331
<i>Hebe 'Win Mt'</i>	koromiko, hebe cultivar	•		1L	0.75	118
<i>Liberia irioides</i>	turutu, New Zealand iris	•		1L	0.4	133
Planting Area						350m ²
Mulch						35m ³
Neighbourhood Street						
Botanical Name	Common Name	Evergreen	Deciduous	Size	Centres (m)	Quantity
Specimen Trees						
<i>Alectryon excelsus</i>	tītiki	•		100-180L	As shown	12
<i>Pyrus calleryana 'Anstocrat'</i>	ornamental pear		•	100-180L	As shown	12
Berm Planting						
<i>Carex testacea</i>	orange sedge	•		1L	0.5	471
<i>Hebe 'Win Mt'</i>	koromiko, hebe cultivar	•		1L	0.75	71
<i>Liberia irioides</i>	turutu, New Zealand iris	•		1L	0.4	186
<i>Pseudowintera 'Cherry Ripe'</i>	flax cultivar	•		1L	0.5	112
Planting Area						520m ²
Mulch						52m ³
Lane						
Botanical Name	Common Name	Evergreen	Deciduous	Size	Centres (m)	Quantity
Specimen Trees						
<i>Knights excelsa</i>	rewarewa	•		100-180L	As shown	2
<i>Magnolia soulangeana x liliiflora 'Genie'</i>	magnolia cultivar		•	100-180L	As shown	2
Berm Planting						
<i>Carex testacea</i>	orange sedge	•		1L	0.5	32
Planting Area						20m ²
Mulch						2m ³

Reserve Recreation and Stormwater						
Botanical Name	Common Name	Evergreen	Deciduous	Size	Centres (m)	Quantity
Specimen Trees						
<i>Fagus sylvatica</i>	European beech		•	100-180L	As shown	4
<i>Knights excelsa</i>	rewarewa	•		100-180L	As shown	25
<i>Podocarpus totara</i>	Mtara	•		100-180L	As shown	9
<i>Quercus robur</i>	English oak		•	100-180L	As shown	8
<i>Sophora microphylla</i>	kōwhiri	•		100-180L	As shown	44
Upper Bank Planting Soft-fine Leaved Grasses						
<i>Carex dipsacea</i>	tease! sedge	•		0.5L	0.5	11123
<i>Carex diisia</i>	forest sedge	•		0.5L	0.5	6342
<i>Carex virgata</i>	pukio/swamp sedge	•		0.5L	0.75	3708
Planting Area						6.020m ²
Lower Bank Planting						
<i>Bolboschoenus fluviatilis</i>	kukuraho	•		0.5L	0.75	878
<i>Carex geminata</i>	cutty grass	•		0.5L	0.75	1765
<i>Carex lessoniana</i>	raulahi	•		0.5L	0.75	1755
<i>Carex secta</i>	purei/makura	•		0.5L	0.75	878
<i>Carex virgata</i>	pukio	•		0.5L	0.75	878
<i>Cordyline australis</i>	cabbage tree	•		0.5L	1	484
<i>Cyperus ustulatus</i>	giant umbrella sedge	•		0.5L	0.5	1975
<i>Eleocharis acuta</i>	spike rush	•		0.5L	0.5	3949
<i>Juncus edgariae</i>	wiri	•		0.5L	0.5	3949
<i>Juncus pallidus</i>	giant rush wiri	•		0.5L	0.75	2633
<i>Machaena articulata</i>	jointed twig-rush	•		0.5L	0.75	1755
<i>Machaena rubiginosa</i>	orange nut sedge	•		0.5L	0.5	3949
Planting Area						8.550m ²
Plant species are indicative only based on assumed soil moisture levels. Species to be reviewed following finalisation of groundwater levels and design. Other Waikato lowland species as appropriate.						



NOTES

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CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
2	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16
PLANTING SCHEDULE**

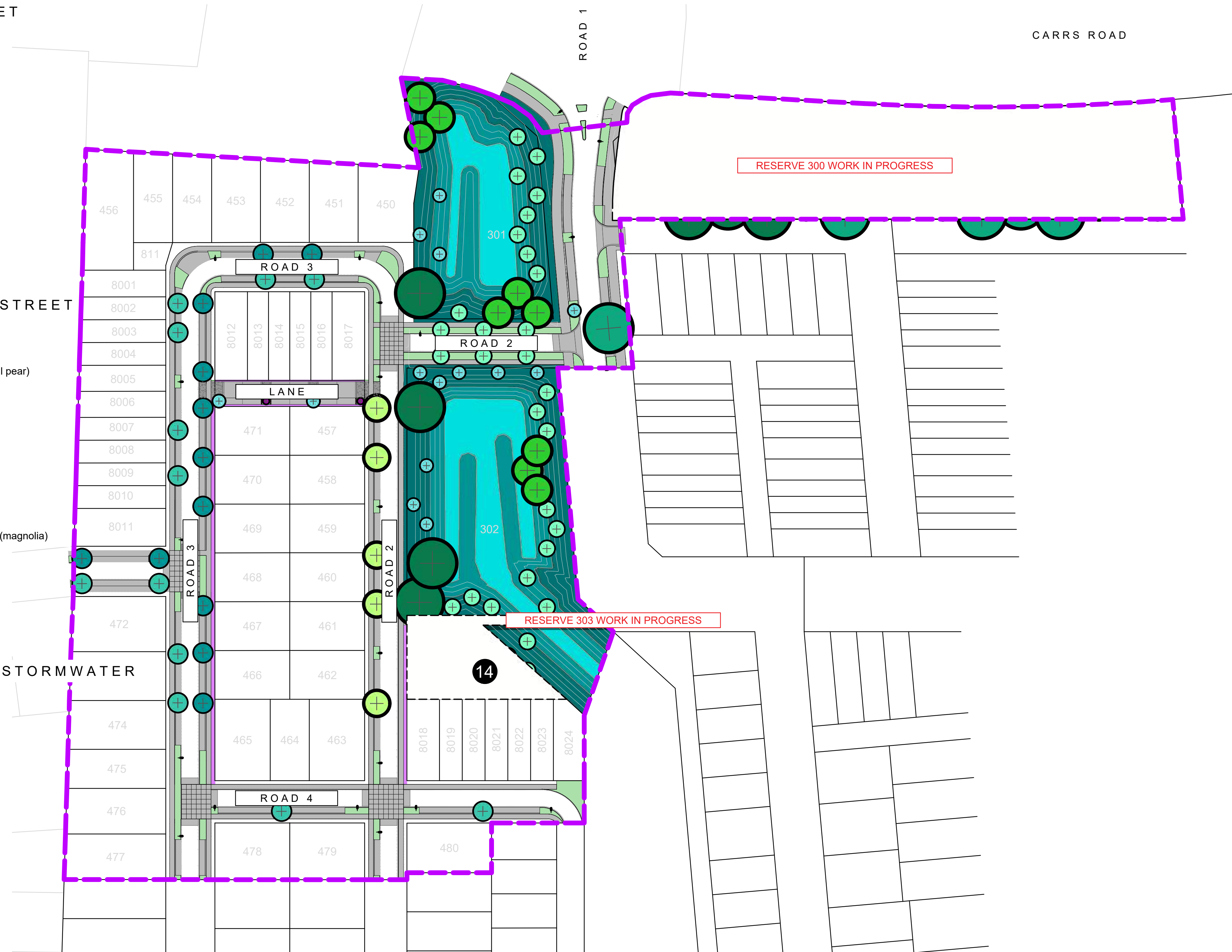
Design Drawn Check App'd	ARo ARo	Scale Not to Scale	Date 17.11.21
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DRAWING NO. BM191029_500 REVISION (2)

Key

- COLLECTOR STREET**
-  *Fagus sylvatica* (European beech)
-  *Knightia excelsa* (rewarewa)
-  Berm Planting
-  Lawn
- LOCAL STREET**
-  *Acer rubrum* (American red maple)
-  Berm Planting
-  Lawn
- NEIGHBOURHOOD STREET**
-  *Alectryon excelsus* (titoki)
-  *Pyrus calleryana* 'Aristocrat' (ornamental pear)
-  Berm Planting
-  Lawn
- LANE**
-  *Knightia excelsa* (rewarewa)
-  *Magnolia soulangeana* x *liliflora* 'Genie' (magnolia)
-  Berm Planting
-  Lawn
- RESERVE**
- RECREATION AND STORMWATER**
-  *Fagus sylvatica* (European beech)
-  *Knightia excelsa* (rewarewa)
-  *Quercus robur* (English oak)
-  *Podocarpus totara* (tōtara)
-  *Sophora microphylla* (kōwhai)
-  Swale Upper Bank Planting
-  Swale Lower Bank Planting
-  Lawn
- RESERVE TREE SET OUT**


A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES

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 FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET
 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	09.02.22	ANNOTATION ADDED FOR PARK NUMBER 14
2	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
3	17.03.22	AS BUILT

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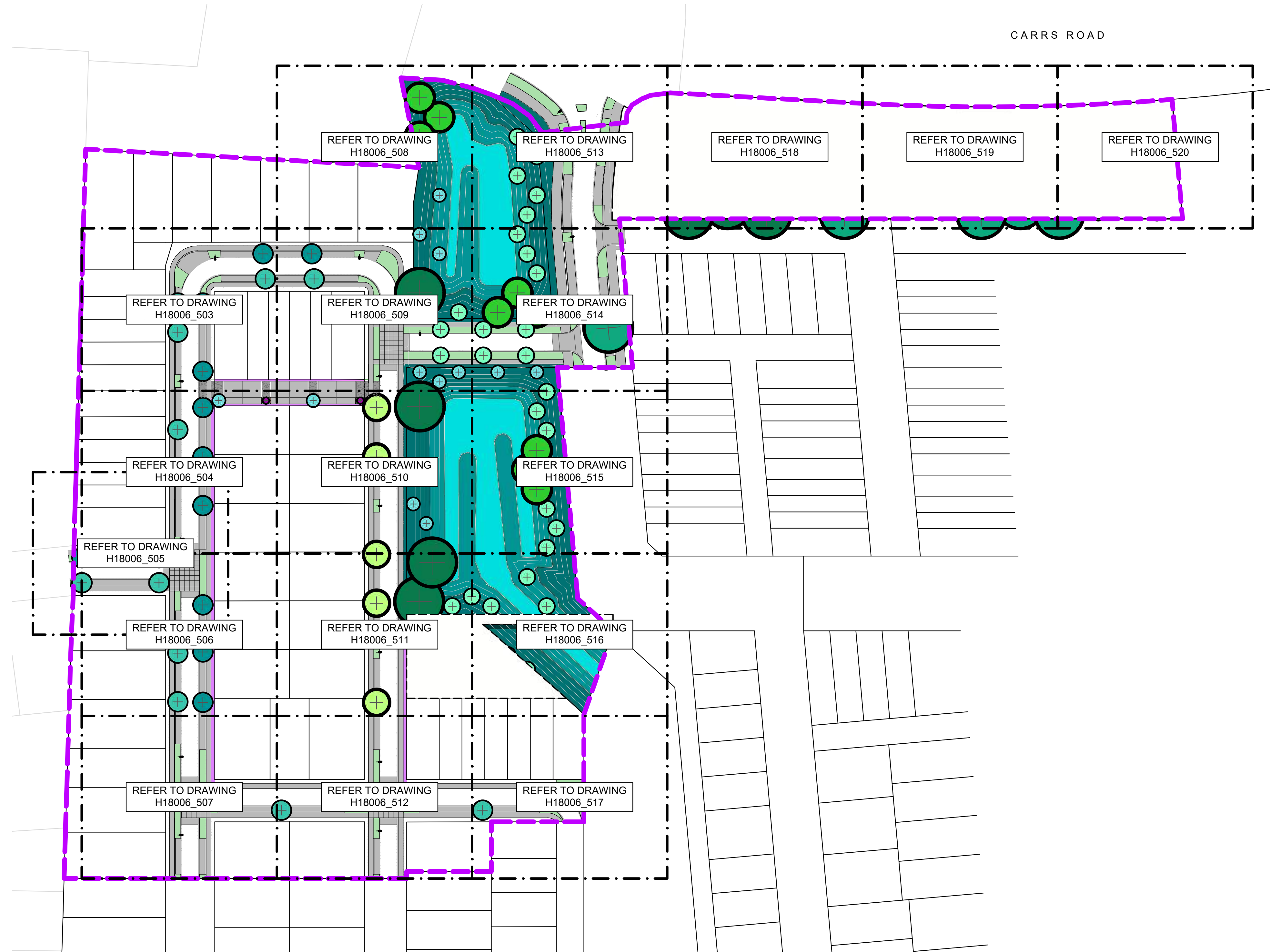
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**GREENHILL PARK
 AREA KL&U
 STAGE 16
 PLANTING PLAN
 GENERAL ARRANGEMENT**

Design	ARo	Scale	Date
Drawn	ARo	1:750 @ A1	17.11.21
Check		1:1,500 @ A3	
App'vd			

DRAWING NO.	REVISION
BM191029_501	3



NOTES

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KEY

- REFER TO DRAWING NUMBER BM191029_130 KEY SHEET
- STAGE 16
- PLANTING
- LAWN

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
2	17.03.22	AS BUILT

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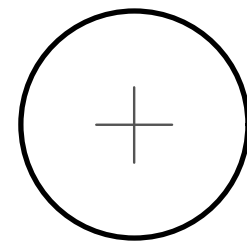


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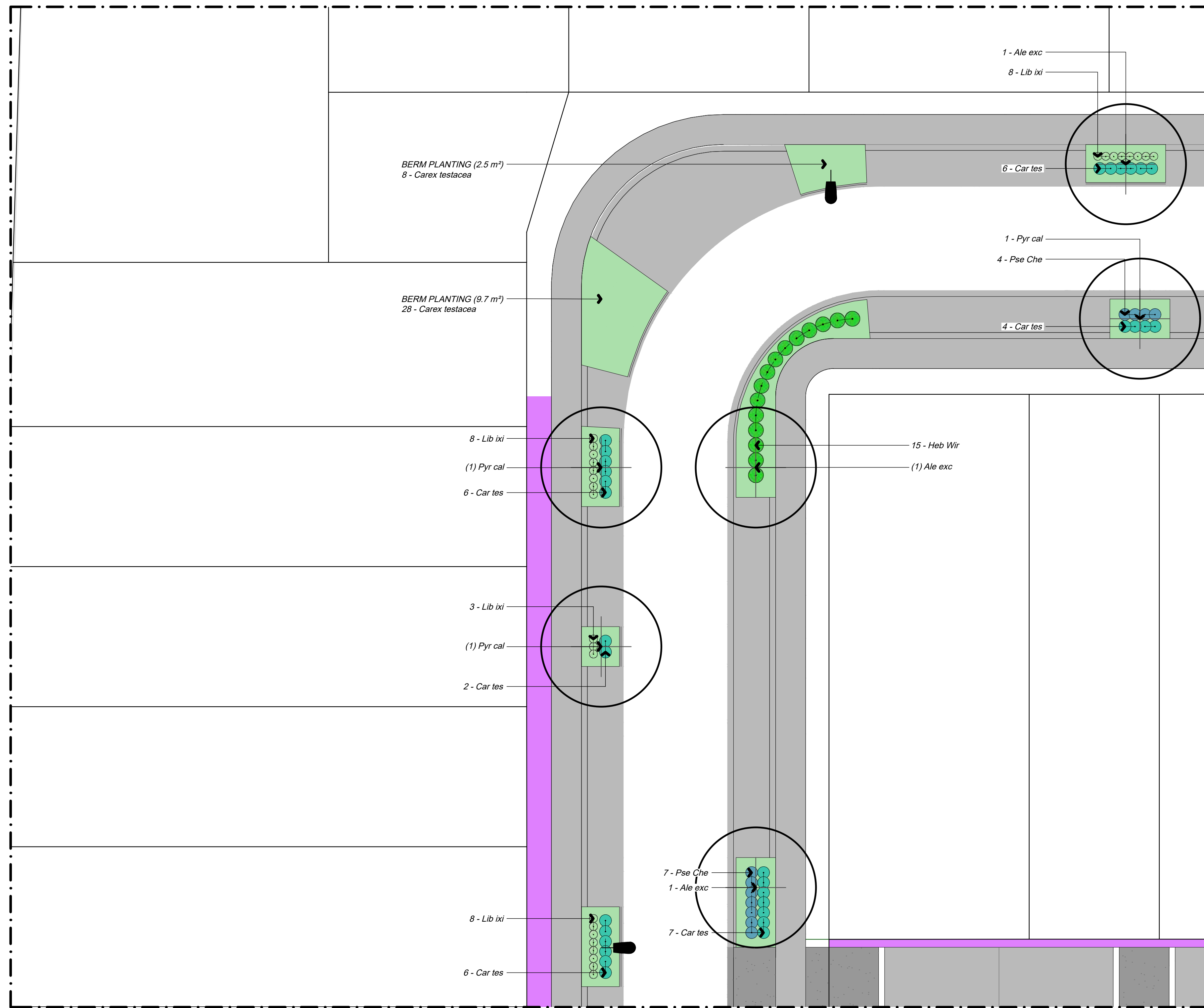
**GREENHILL PARK
 AREA KL&U
 STAGE 16
 PLANTING PLAN SHEET LOCATIONS**

Design	ARo	Scale	Date
Drawn	ARo	1:750 @ A1	17.11.21
Check		1:1,500 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_502	2

Key

-  Tree
-  Berm Planting
-  Lawn



REFER TO DRAWING BM191029_509

REFER TO DRAWING BM191029_504

Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.

NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
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2	17.03.22	AS BUILT

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IBEX Lighting

AS BUILT

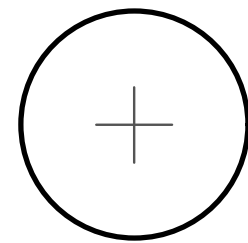
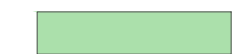

GREENHILL PARK
AREA KL&U
STAGE 16

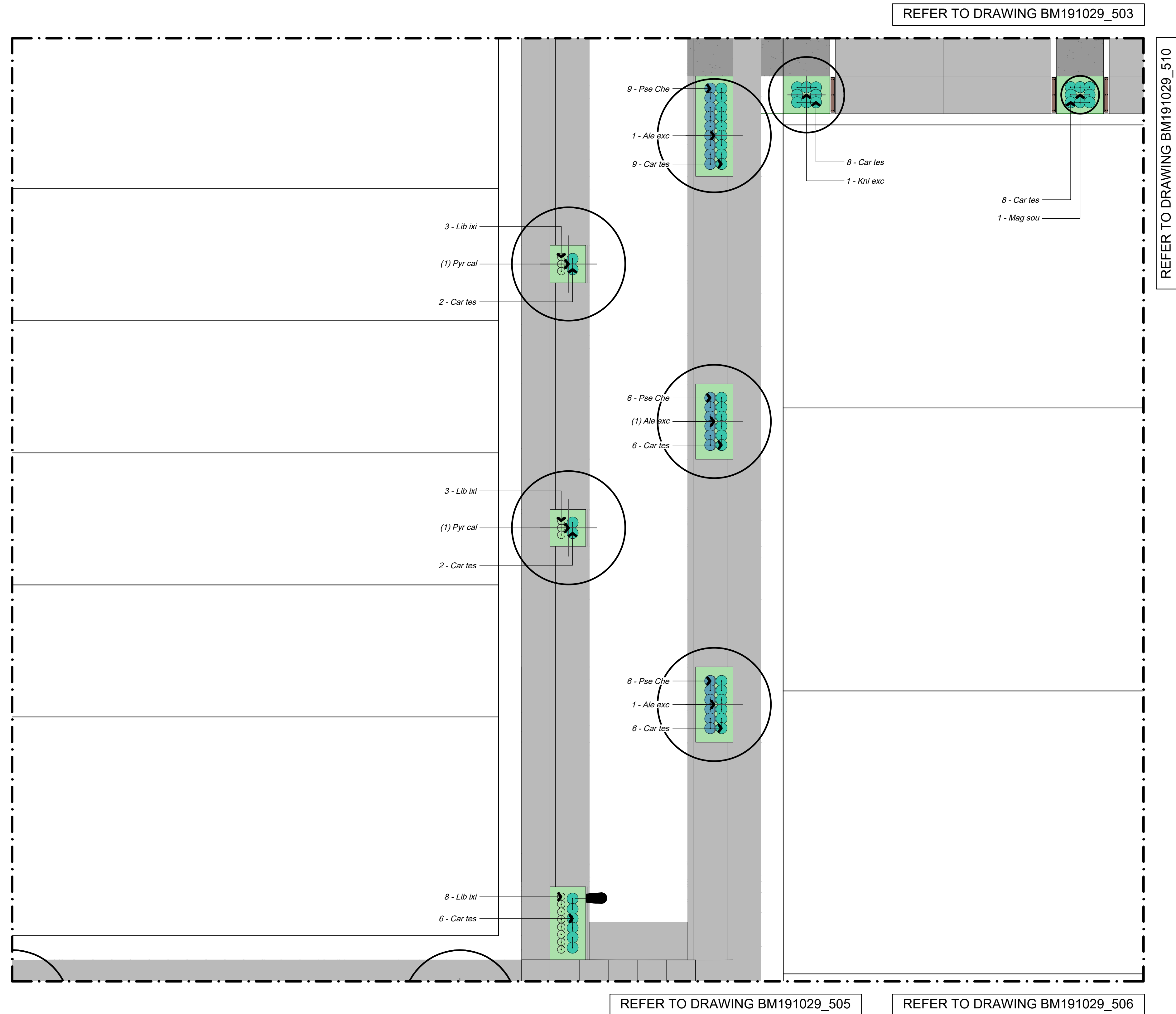
PLANTING PLAN
SHEET 01 OF 18

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Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_503	(2)

Key

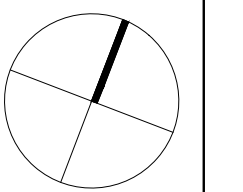
-  Tree
-  Berm Planting
-  Lawn



Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
2	17.03.22	AS BUILT

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Chedworth Properties Ltd

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**GREENHILL PARK
AREA KL&U
STAGE 16**

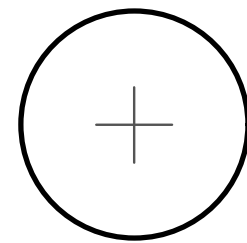
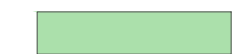

PLANTING PLAN
SHEET 02 OF 18

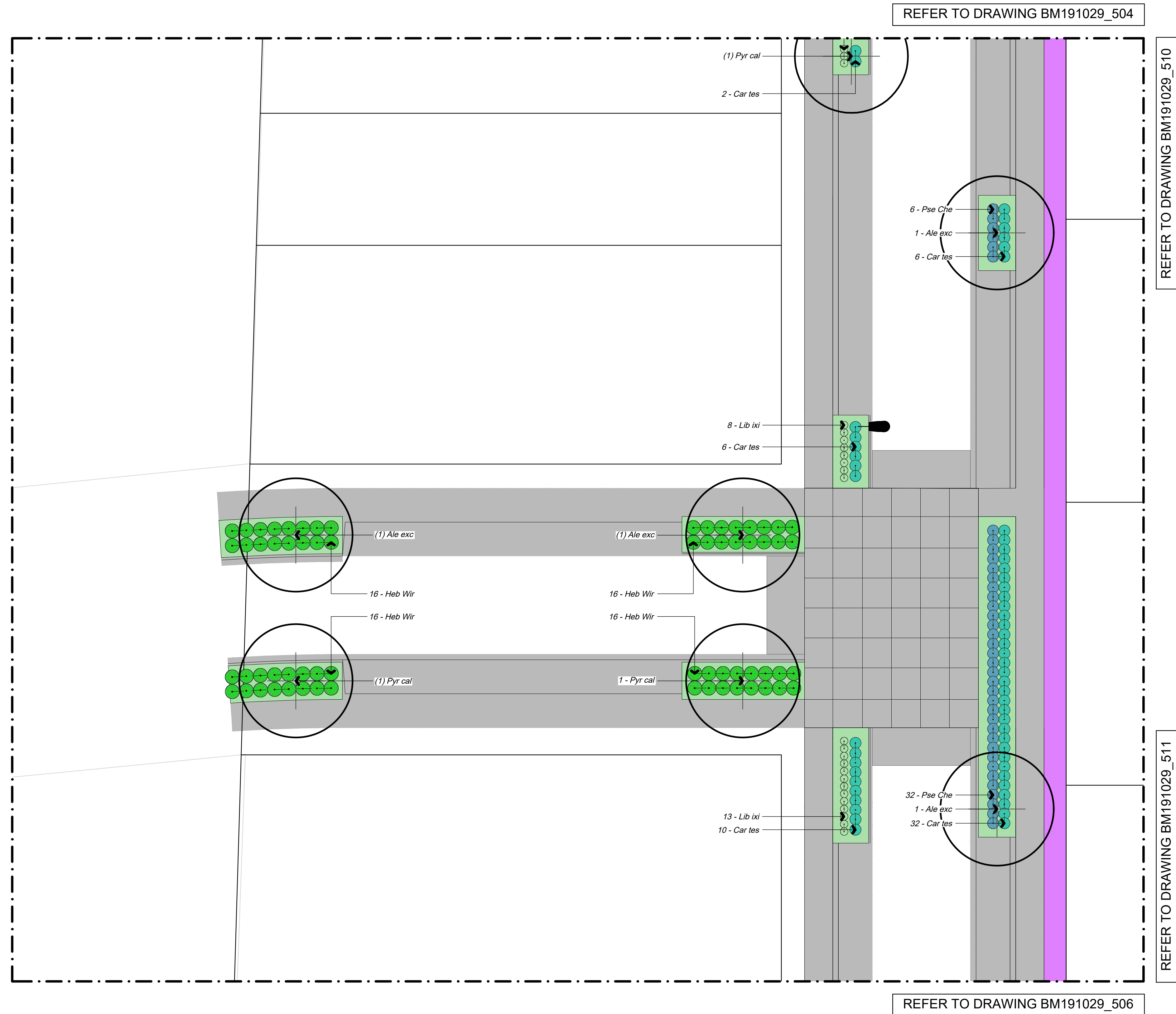
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Drawn	ARo	1:125 @ A1	17.11.21
Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_504 2

Key

-  Tree
-  Berm Planting
-  Lawn



Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
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NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

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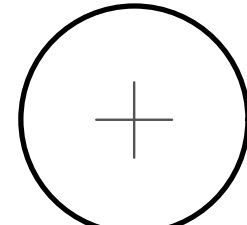

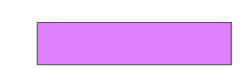
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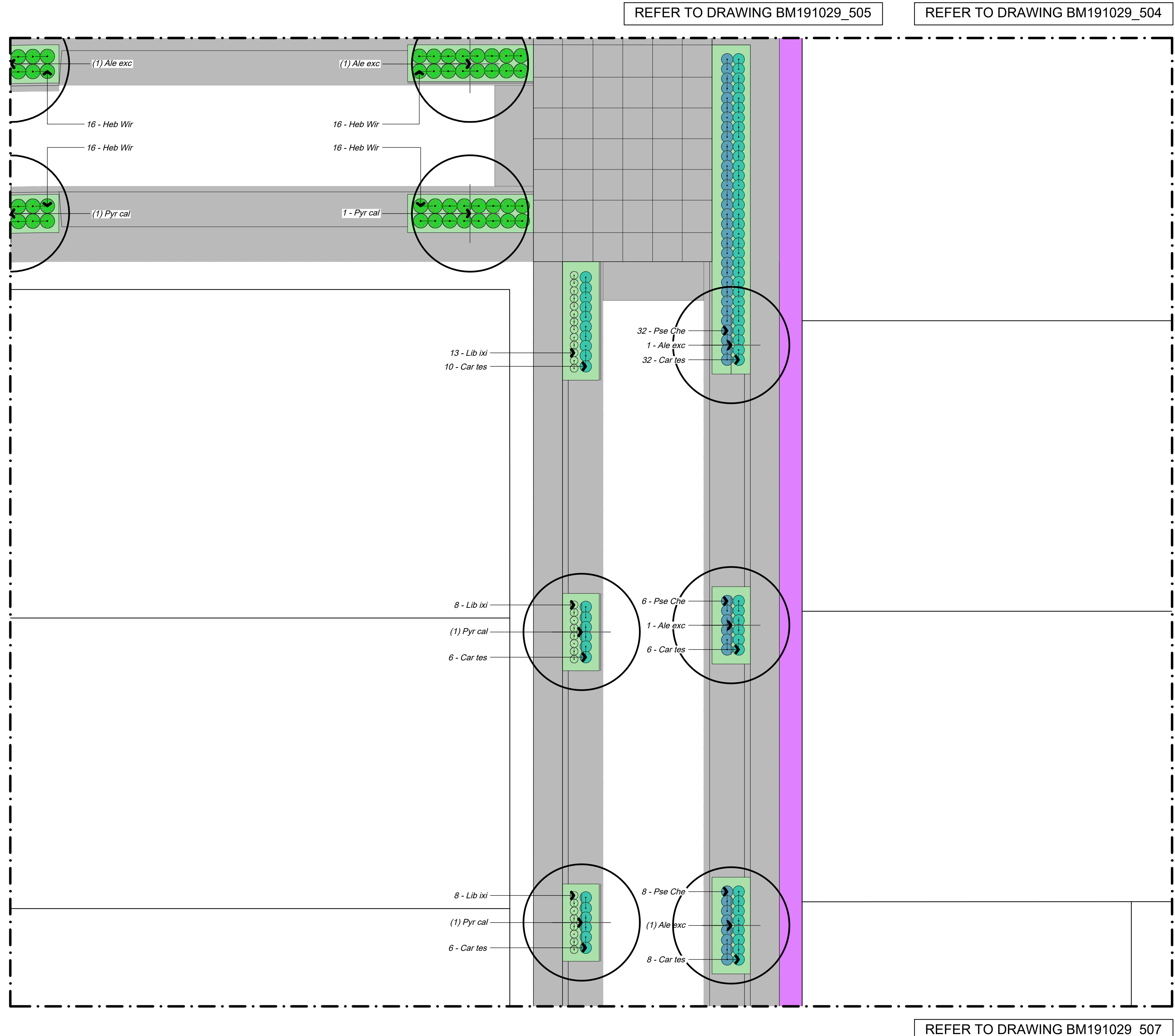
GREENHILL PARK
AREA KL&U
STAGE 16
PLANTING PLAN
SHEET 03 OF 18

Design	ARo	Scale	Date
Drawn	ARo	1:125 @ A1	17.11.21
Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_505	1

Key

-  Tree
-  Berm Planting
-  Lawn

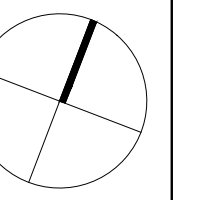


Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.

REFER TO DRAWING BM191029_507



NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

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S&L Consultants
IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16**

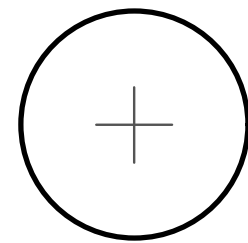
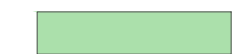

PLANTING PLAN
SHEET 04 OF 18

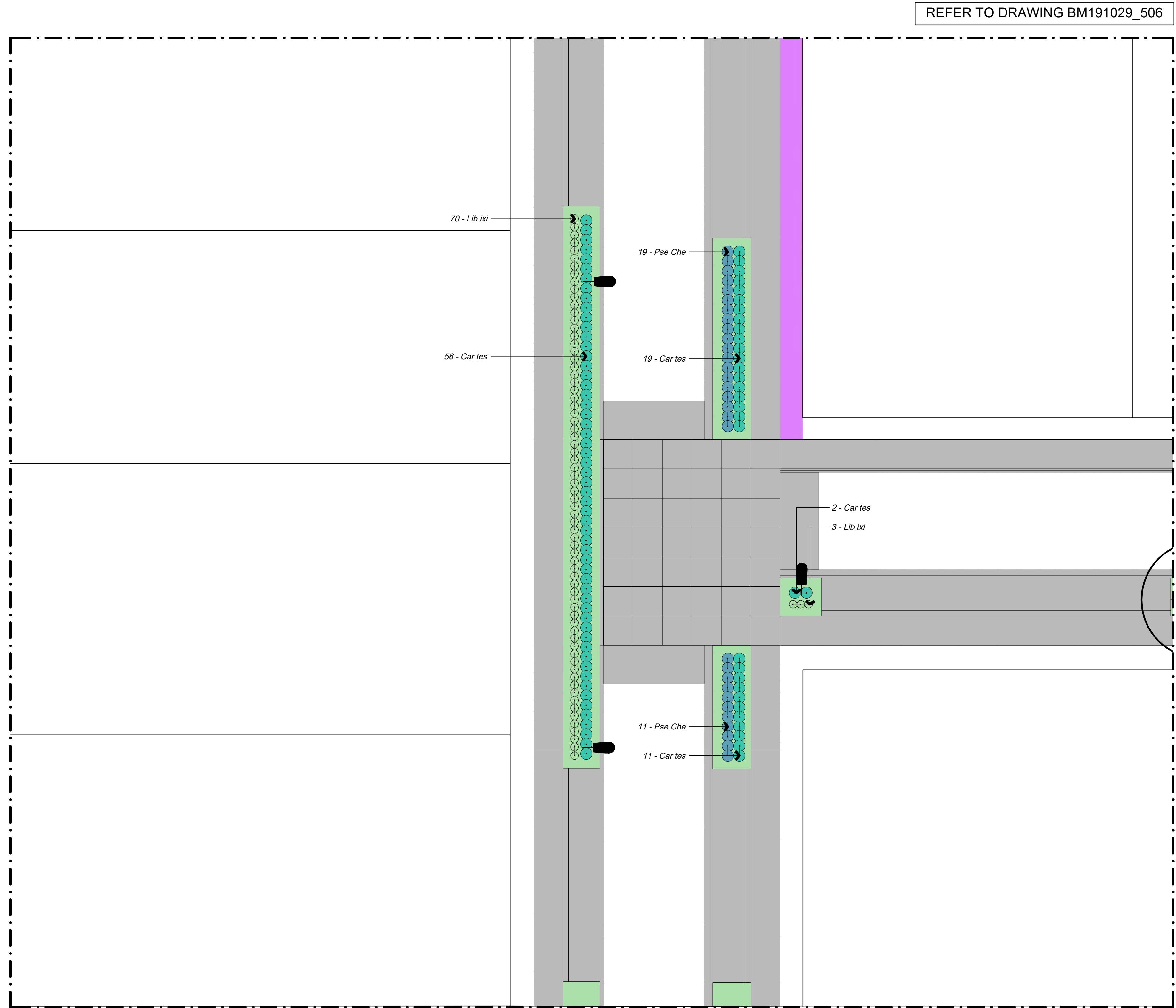
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_506 **1**

Key

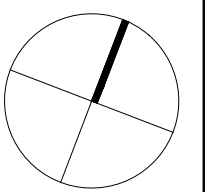
-  Tree
-  Berm Planting
-  Lawn



Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

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Chedworth Properties Ltd

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IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16**

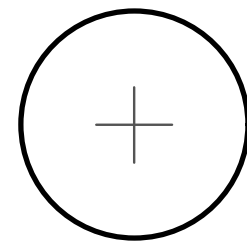


PLANTING PLAN
SHEET 05 OF 18

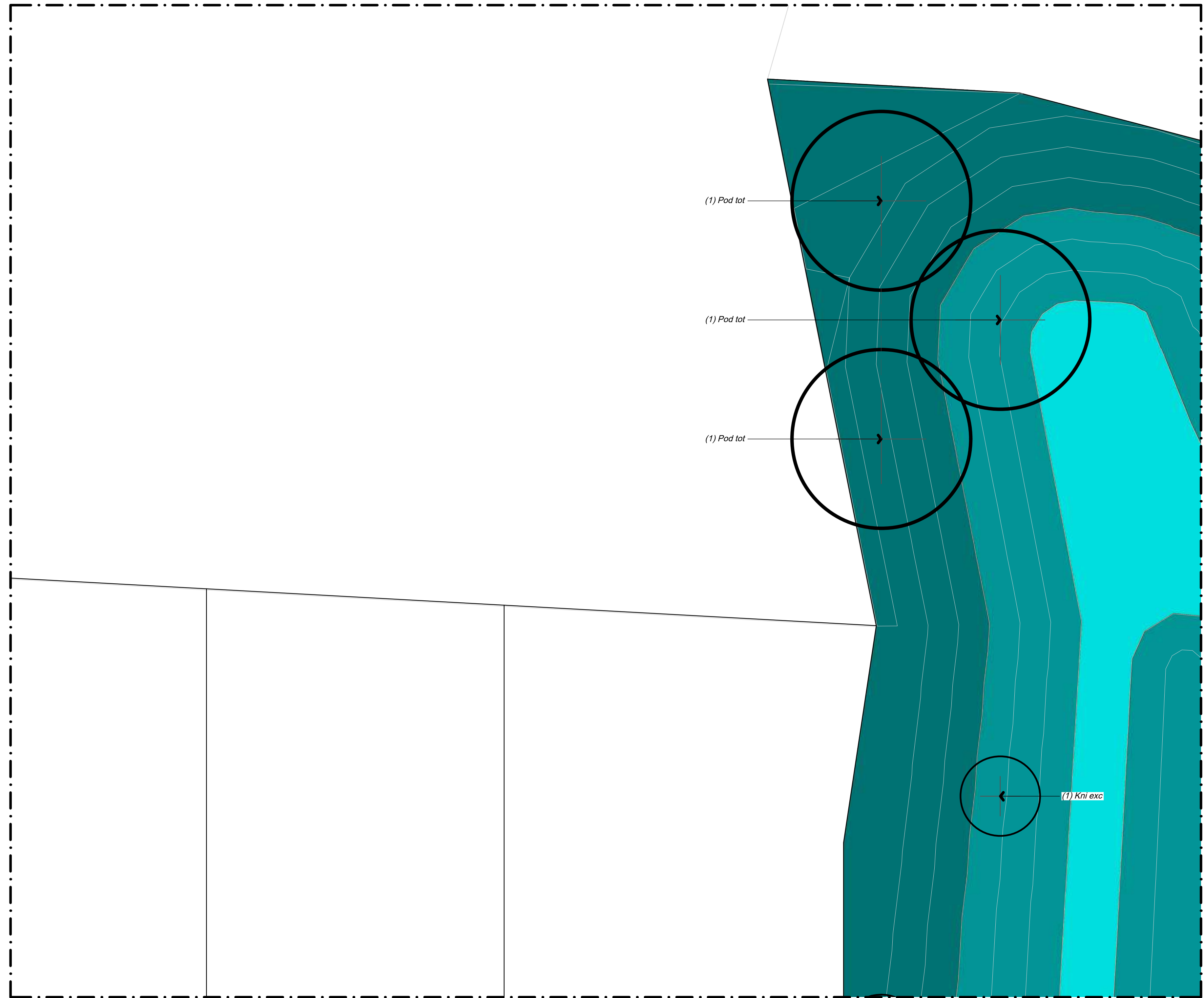
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Drawn	ARo	1:125 @ A1	17.11.21
Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_507 1

Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting



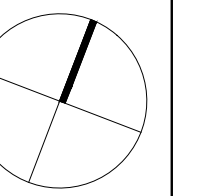
REFER TO DRAWING BM191029_513

REFER TO DRAWING BM191029_509

Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

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IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

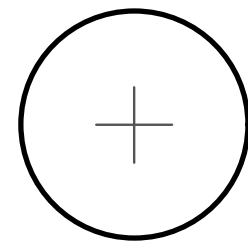




PLANTING PLAN
SHEET 06 OF 18

Design	ARo	Scale	Date
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_508 1

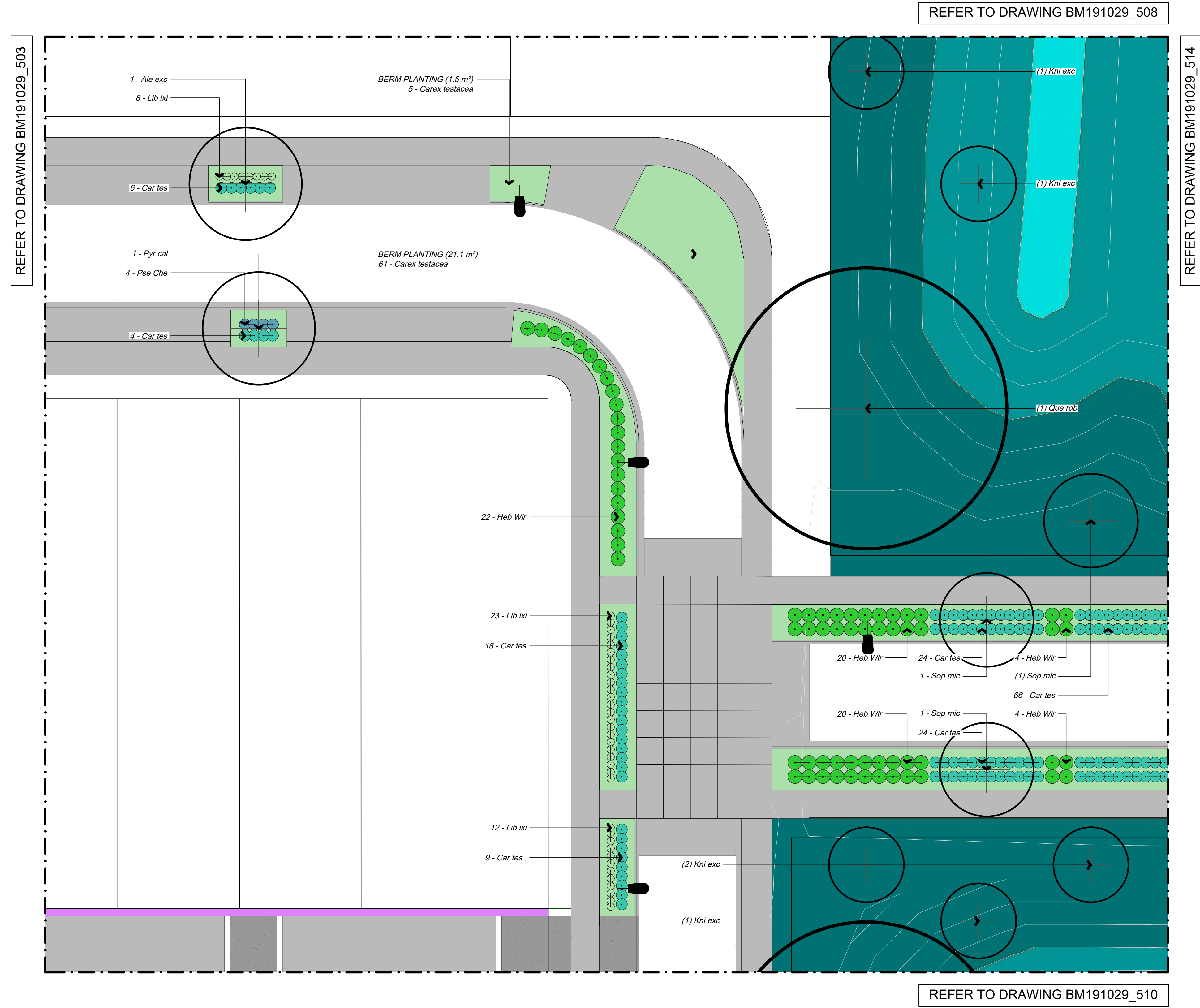
Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn

Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES


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KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	11.02.22	REVISIONS TO ACCESS LANE LOT 8119
2	17.03.22	AS BUILT

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Chedworth Properties Ltd

CONSULTANTS
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IBEX Lighting

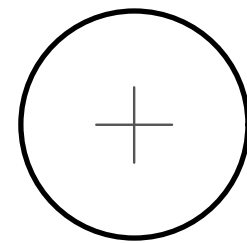




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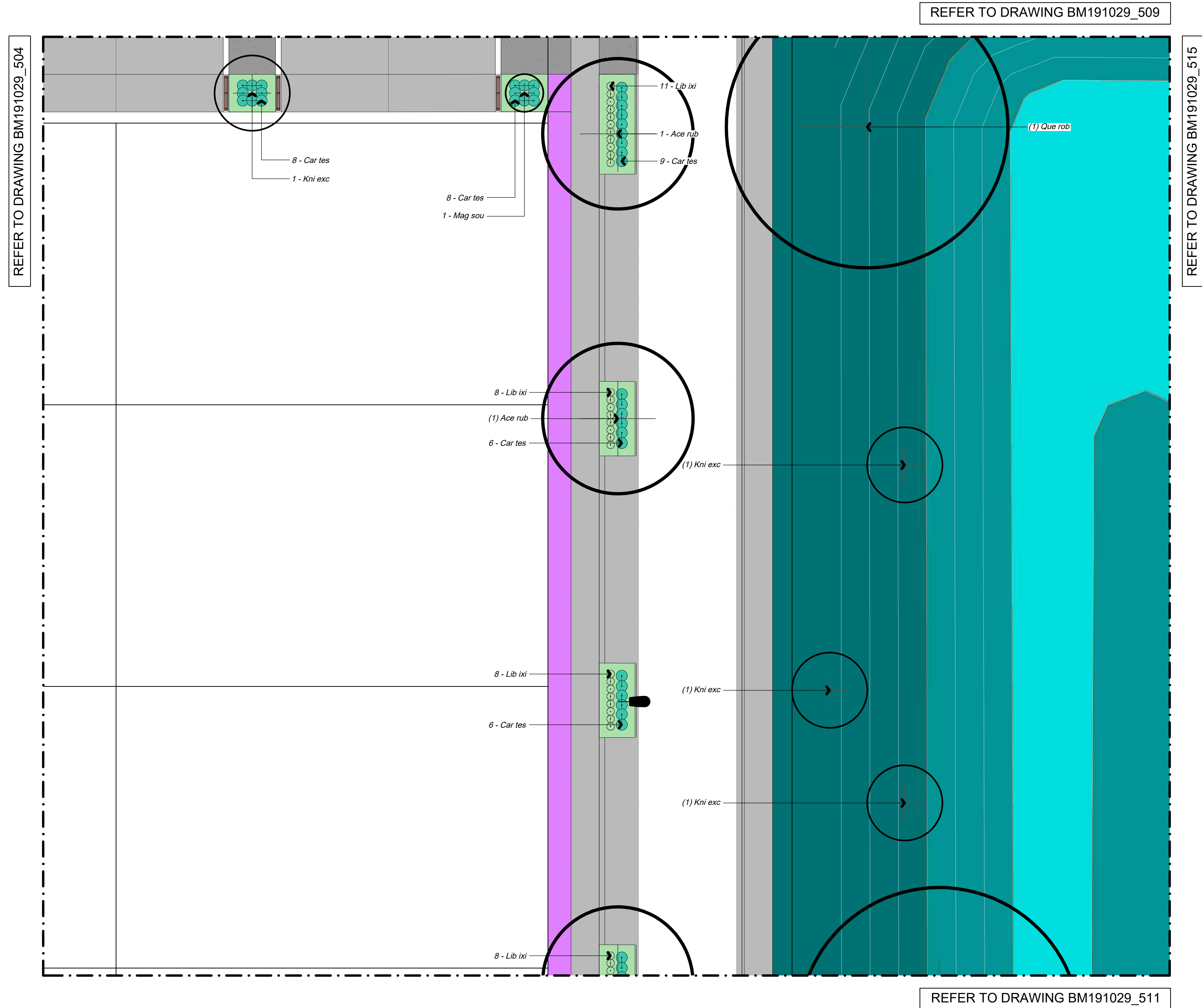
GREENHILL PARK
AREA KL&U
STAGE 16
PLANTING PLAN
SHEET 07 OF 18

Design	ARo	Scale	Date
Drawn	ARo	1:125 @ A1	17.11.21
Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_509	(2)

Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn



Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.

NOTES


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 STAGE 16

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S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

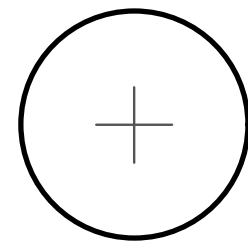




PLANTING PLAN
SHEET 08 OF 18

Design	ARo	Scale	Date
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Appv'd			

DRAWING NO. REVISION

BM191029_510 (2)

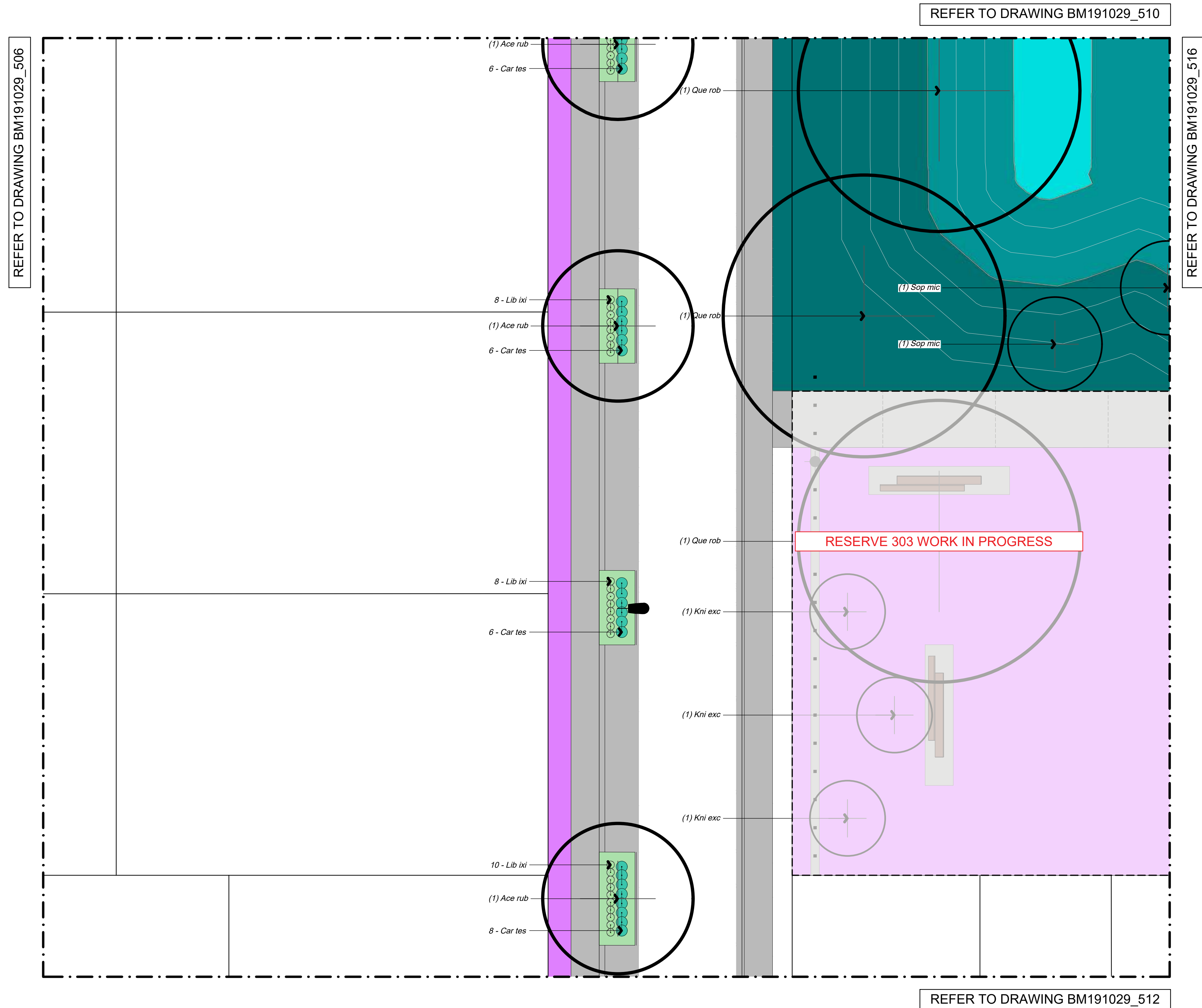
Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn

Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
A CAD Drawing (DWG/DXF Format) will be provided to the Contractor for set out purposes.



NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REFER TO DRAWING NUMBER BM191029_130 KEY SHEET

 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

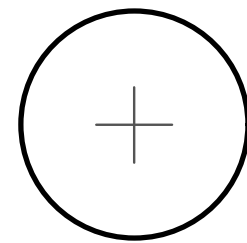
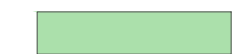

PLANTING PLAN
SHEET 09 OF 18

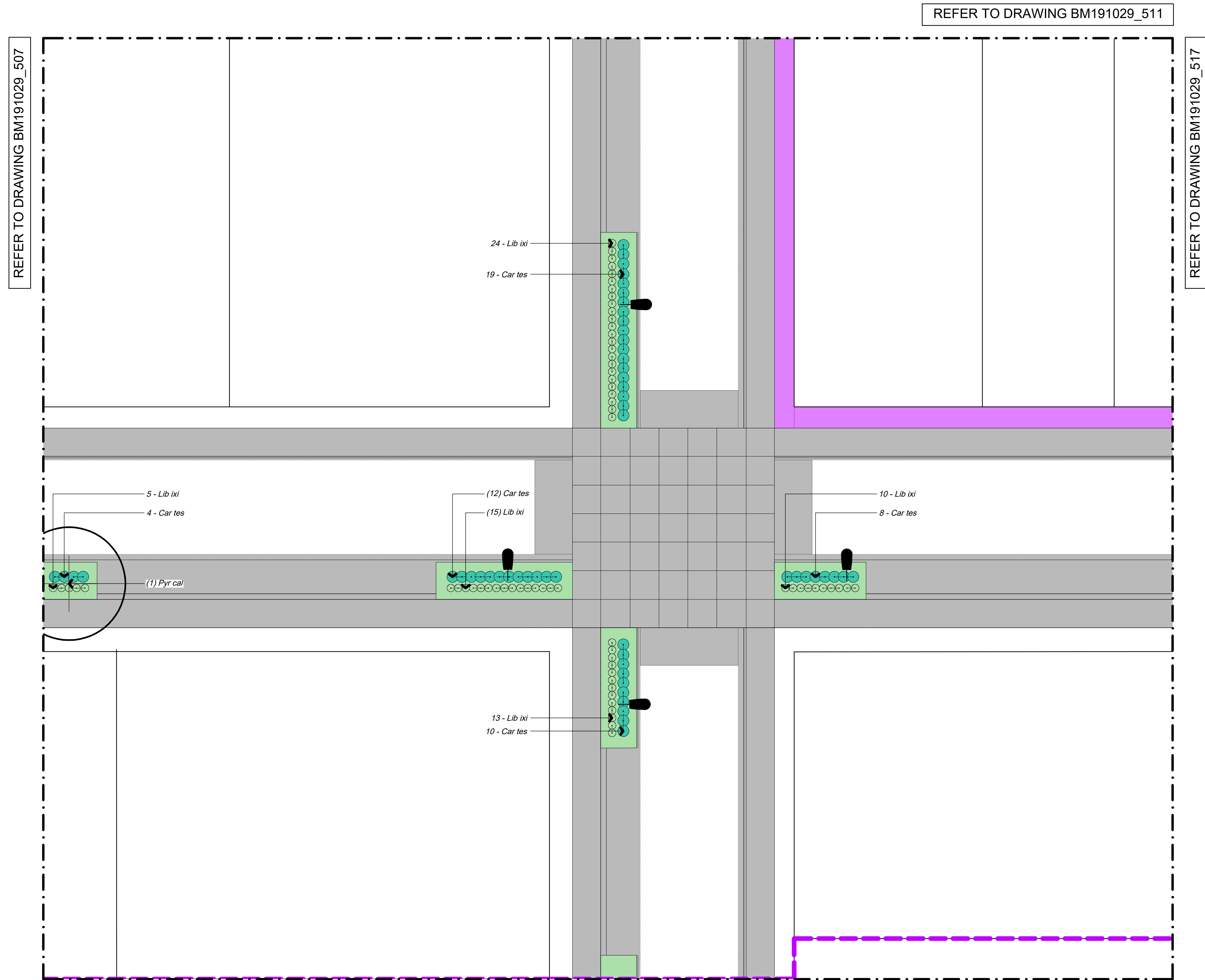
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_511 1

Key

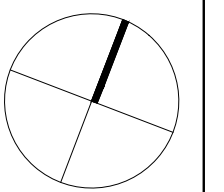
-  Tree
-  Berm Planting
-  Lawn



Set Out

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 STAGE 16

REV	DATE	DESCRIPTION
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1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

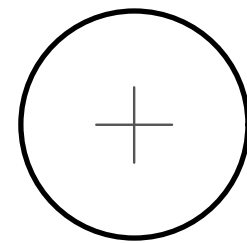




PLANTING PLAN
SHEET 10 OF 18

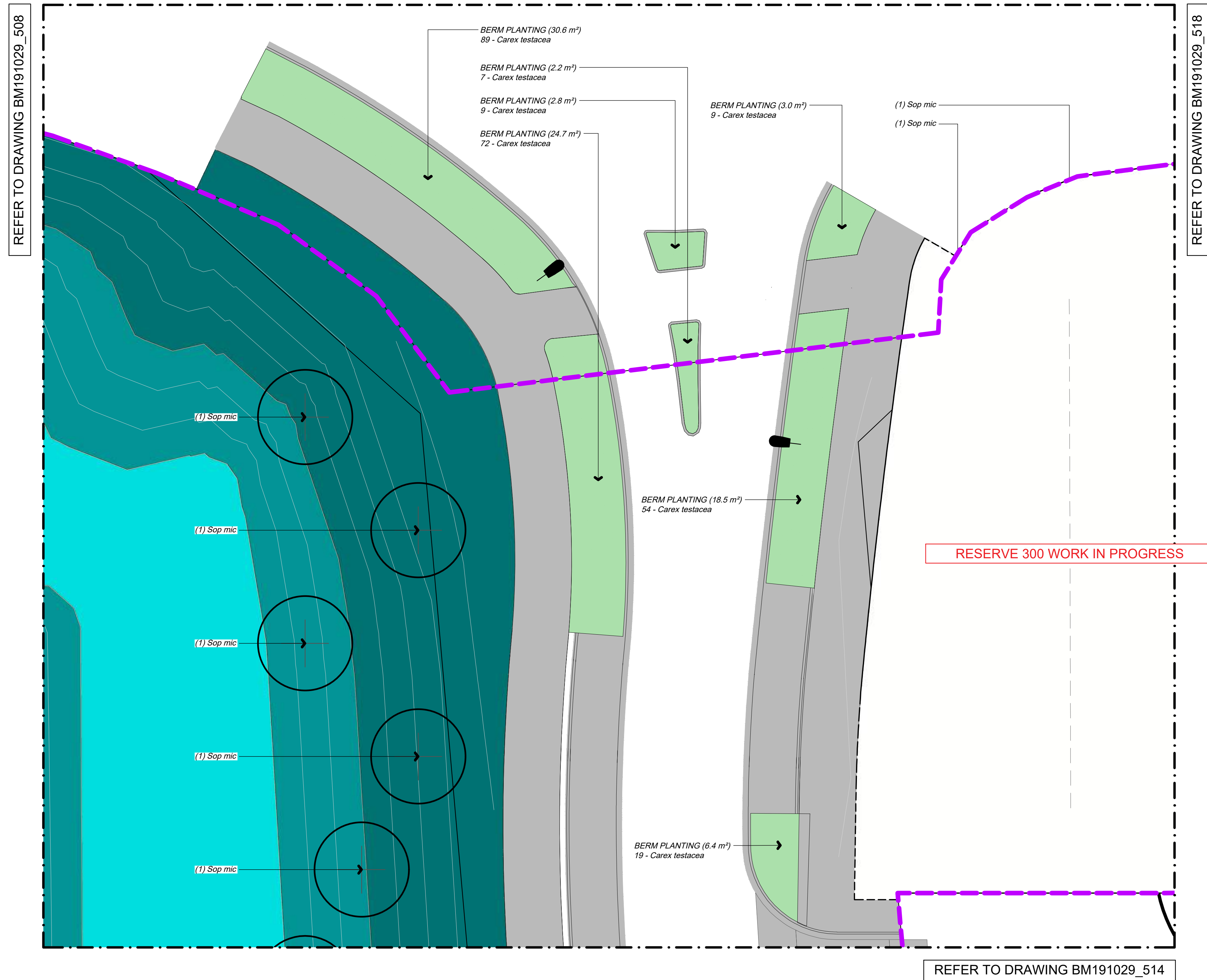
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_512 1

Key

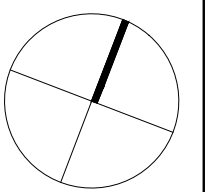
-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn



Set Out

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 STAGE 16

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-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

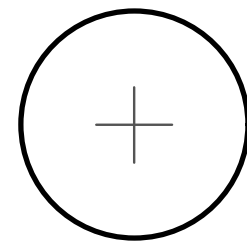




**GREENHILL PARK
AREA KL&U
STAGE 16**

PLANTING PLAN
SHEET 11 OF 18

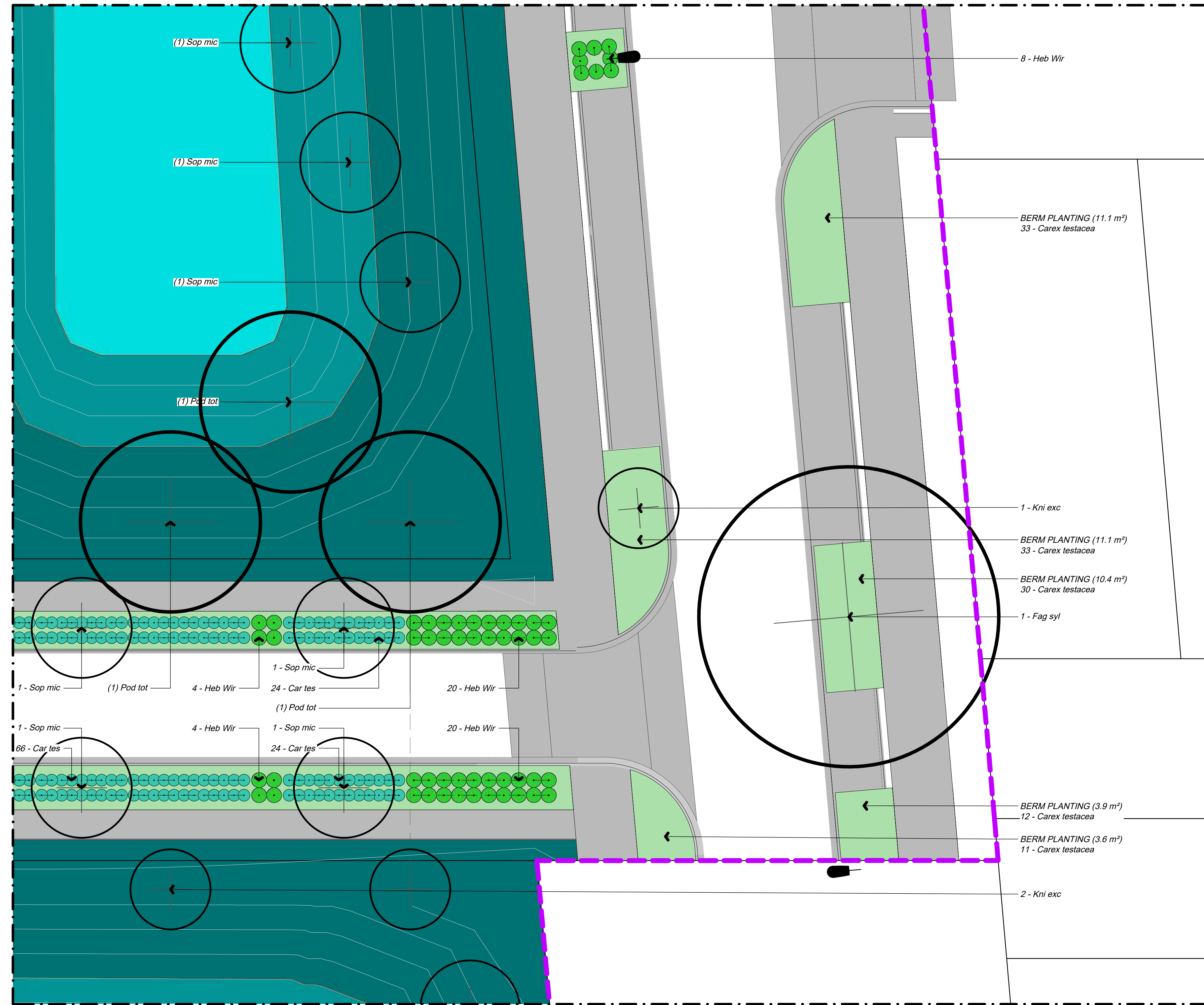
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Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_513	1

Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn

REFER TO DRAWING BM191029_509



REFER TO DRAWING BM191029_513

REFER TO DRAWING BM191029_515

Set Out

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Reserve Tree Set Out
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CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

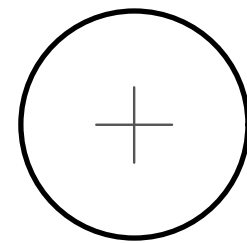


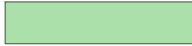

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16
PLANTING PLAN
SHEET 12 OF 18

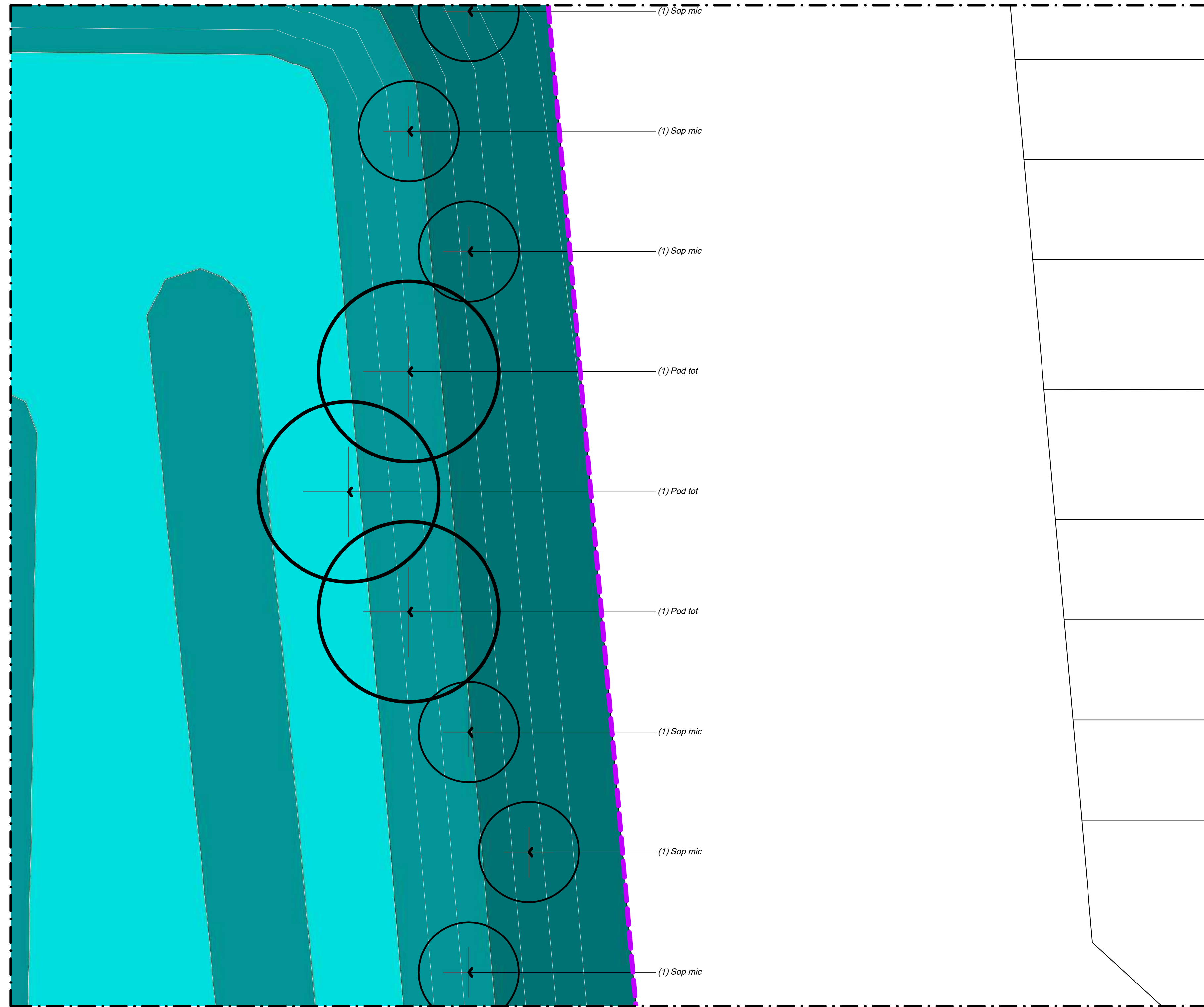
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Check		1:250 @ A3	
Appv'd			

DRAWING NO.	REVISION
BM191029_514	1

Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn

REFER TO DRAWING BM191029_510



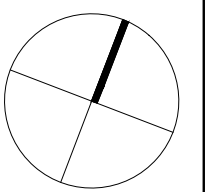
REFER TO DRAWING BM191029_514

REFER TO DRAWING BM191029_516

Set Out

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Reserve Tree Set Out
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 STAGE 16

REV	DATE	DESCRIPTION
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1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16**

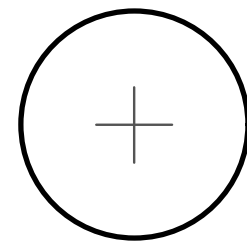




PLANTING PLAN
SHEET 13 OF 18

Design	ARo	Scale	Date
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Check		1:250 @ A3	
Appv'd			

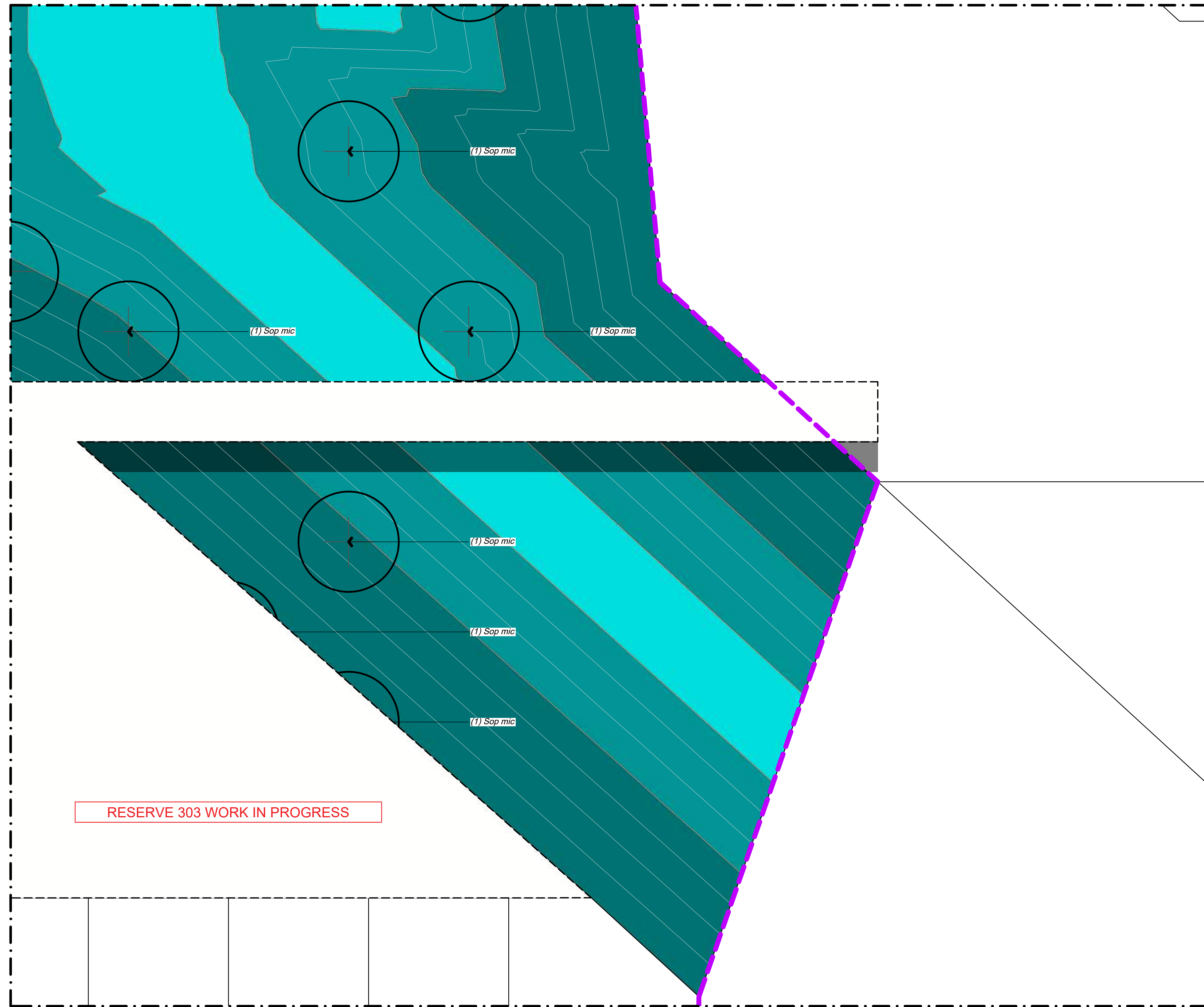
DRAWING NO. REVISION

BM191029_515 1

Key

-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting
-  Berm Planting
-  Lawn

REFER TO DRAWING BM191029_511



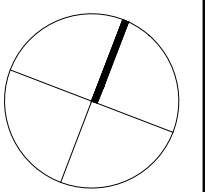
REFER TO DRAWING BM191029_515

REFER TO DRAWING BM191029_517

Set Out

All plant pits shall be setback 600mm minimum from the edge of all kerbs, nibs and footpaths.

Reserve Tree Set Out
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 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16**

PLANTING PLAN
SHEET 14 OF 18

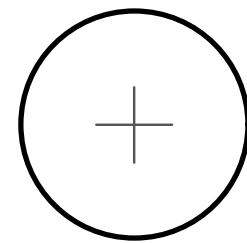


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Appv'd			

DRAWING NO. REVISION

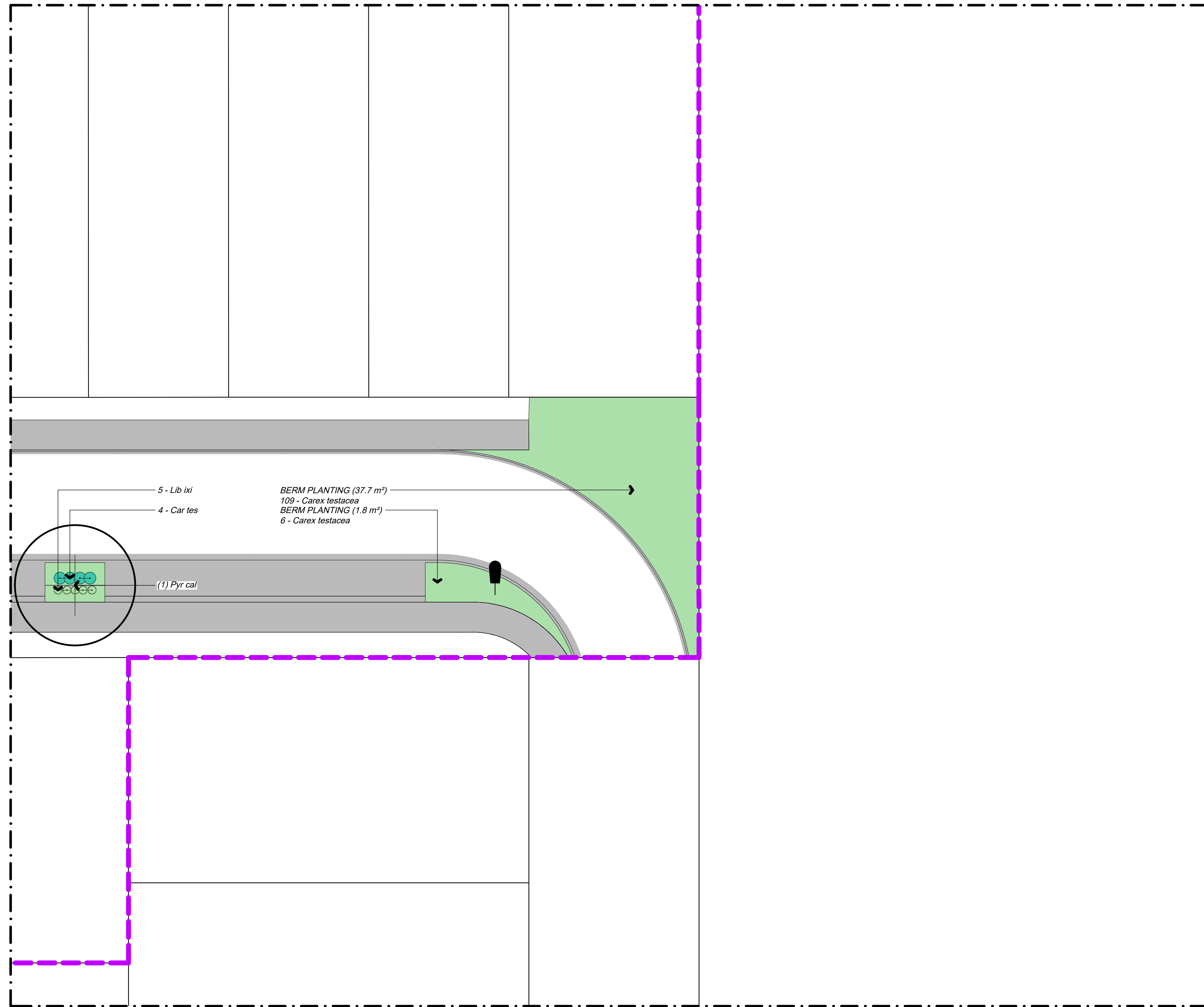
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REFER TO DRAWING BM191029_516

Key

-  Tree
-  Berm Planting
-  Lawn

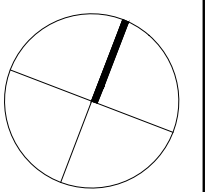
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Set Out

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Reserve Tree Set Out
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 STAGE 16

REV	DATE	DESCRIPTION
-	17.11.21	ISSUED FOR CONSTRUCTION
1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

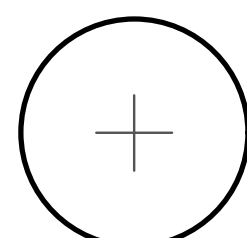


PLANTING PLAN
SHEET 15 OF 18

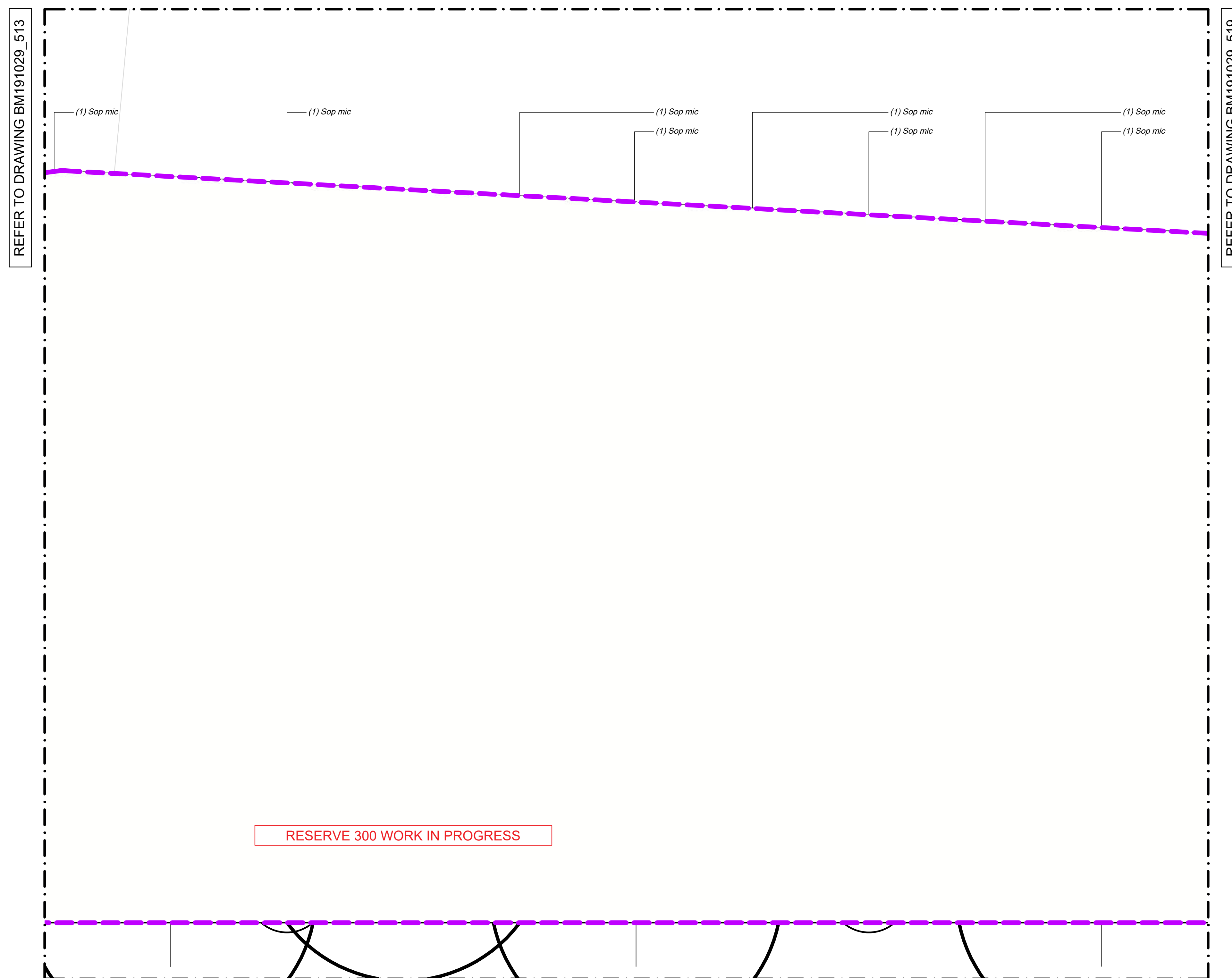
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

BM191029_517 **1**

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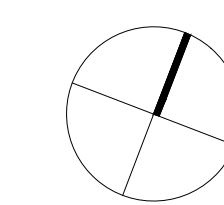
-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting



Set Out

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1	17.03.22	AS BUILT

CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK
AREA KL&U
STAGE 16

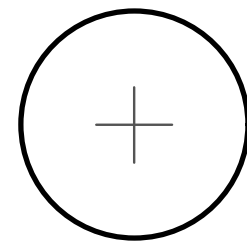


PLANTING PLAN
SHEET 16 OF 18

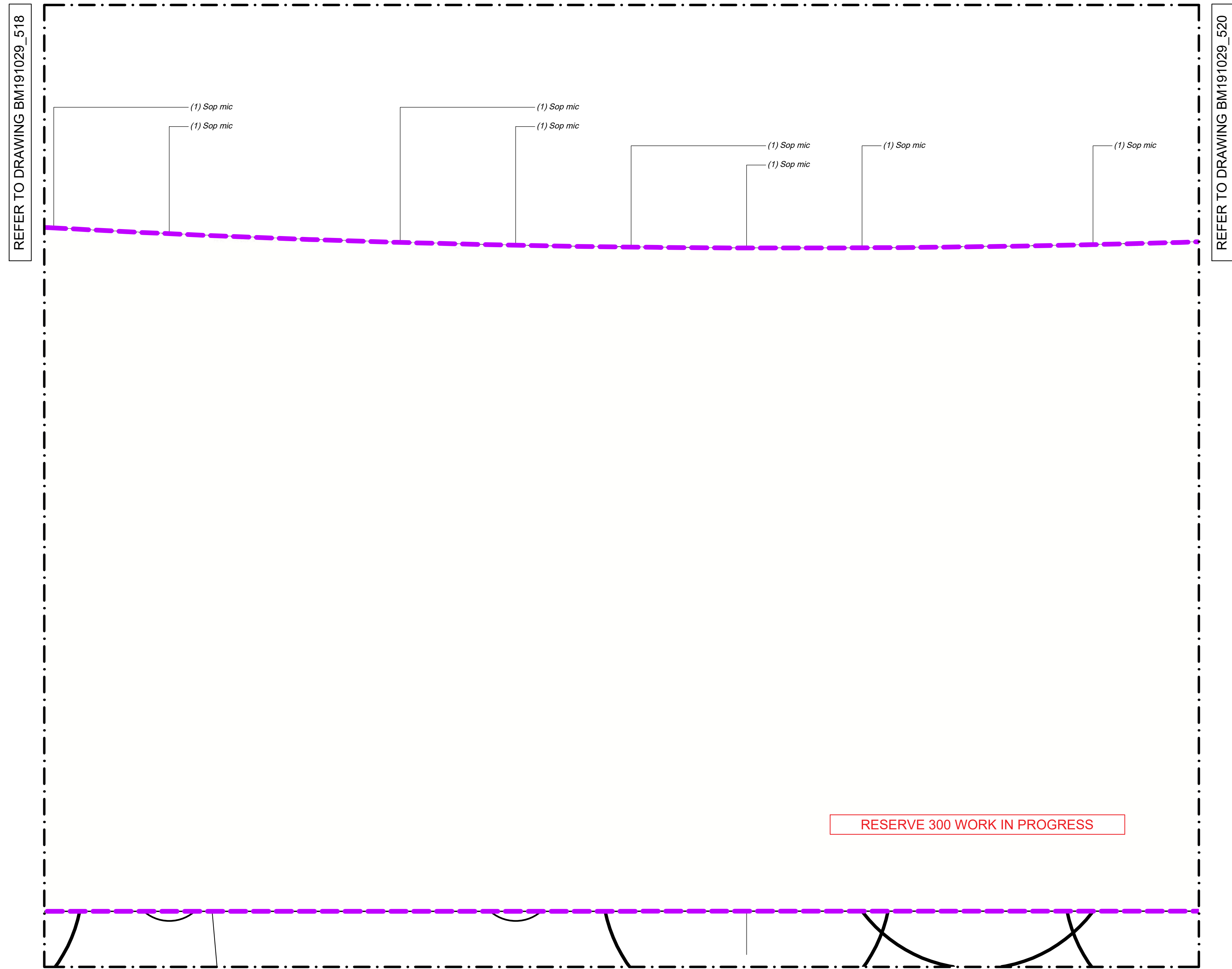
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DRAWING NO. REVISION

BM191029_518 **1**

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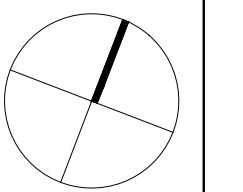
-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting



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CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

**GREENHILL PARK
AREA KL&U
STAGE 16**

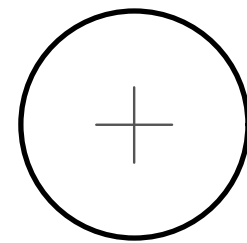


PLANTING PLAN
SHEET 17 OF 18

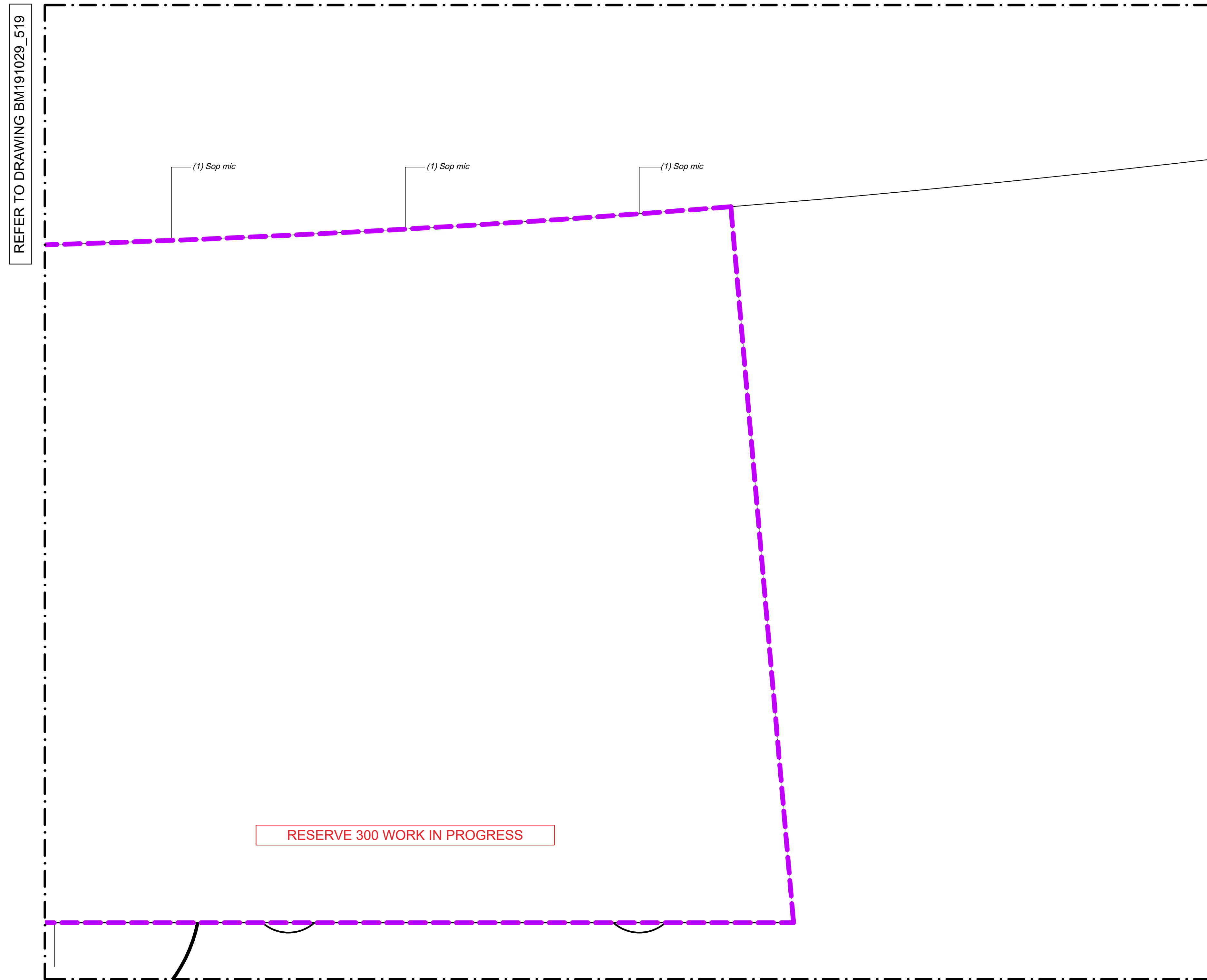
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Check		1:250 @ A3	
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DRAWING NO. REVISION

BM191029_519 **1**

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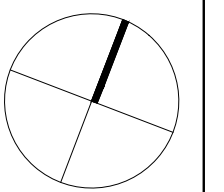
-  Tree
-  Swale Upper Bank Planting
Soft-fine leaved grasses
-  Swale Lower Bank Planting



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CLIENT
Chedworth Properties Ltd

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

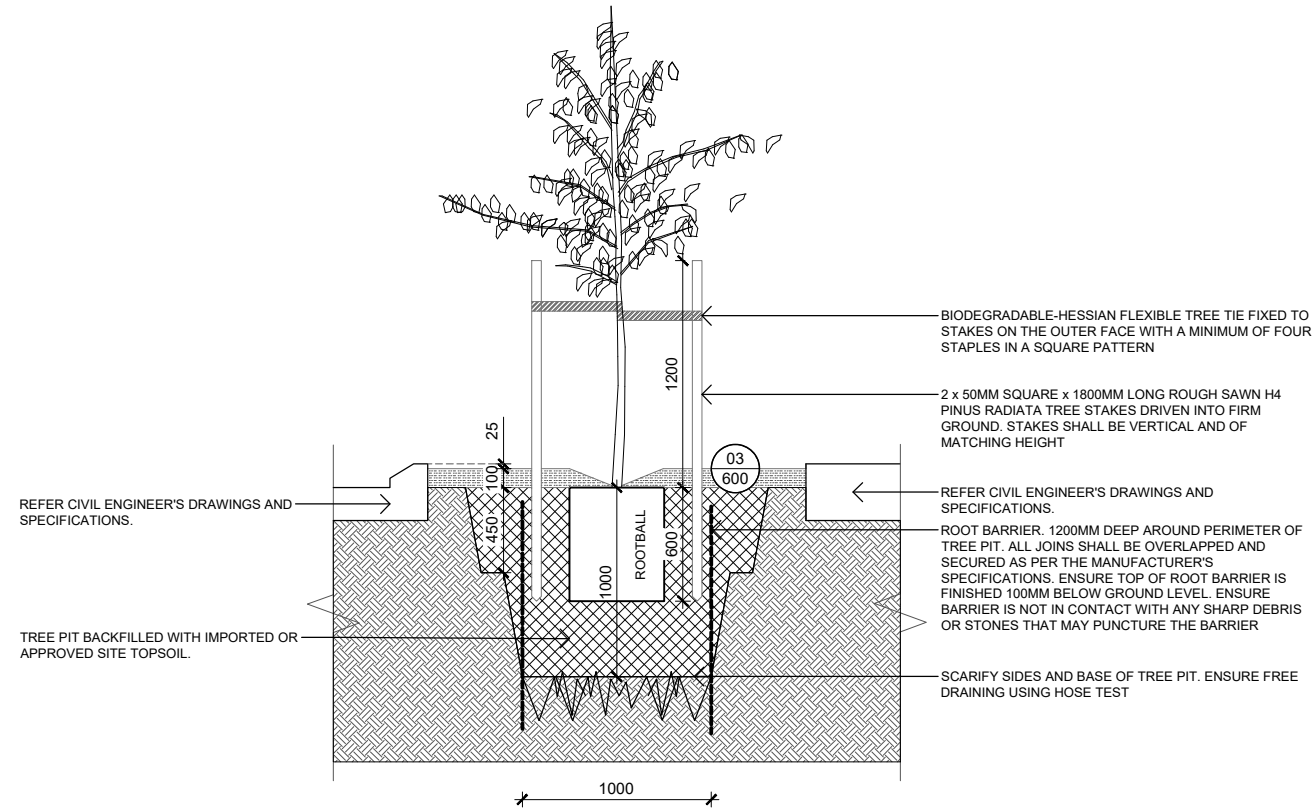
GREENHILL PARK
AREA KL&U
STAGE 16

PLANTING PLAN
SHEET 18 OF 18

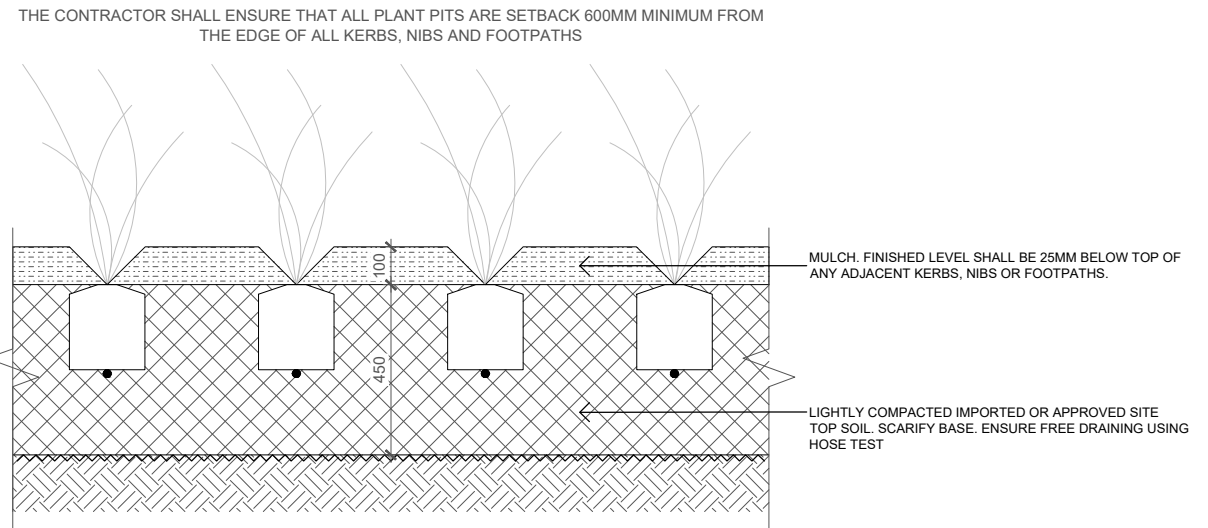
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Check		1:250 @ A3	
Appv'd			

DRAWING NO. REVISION

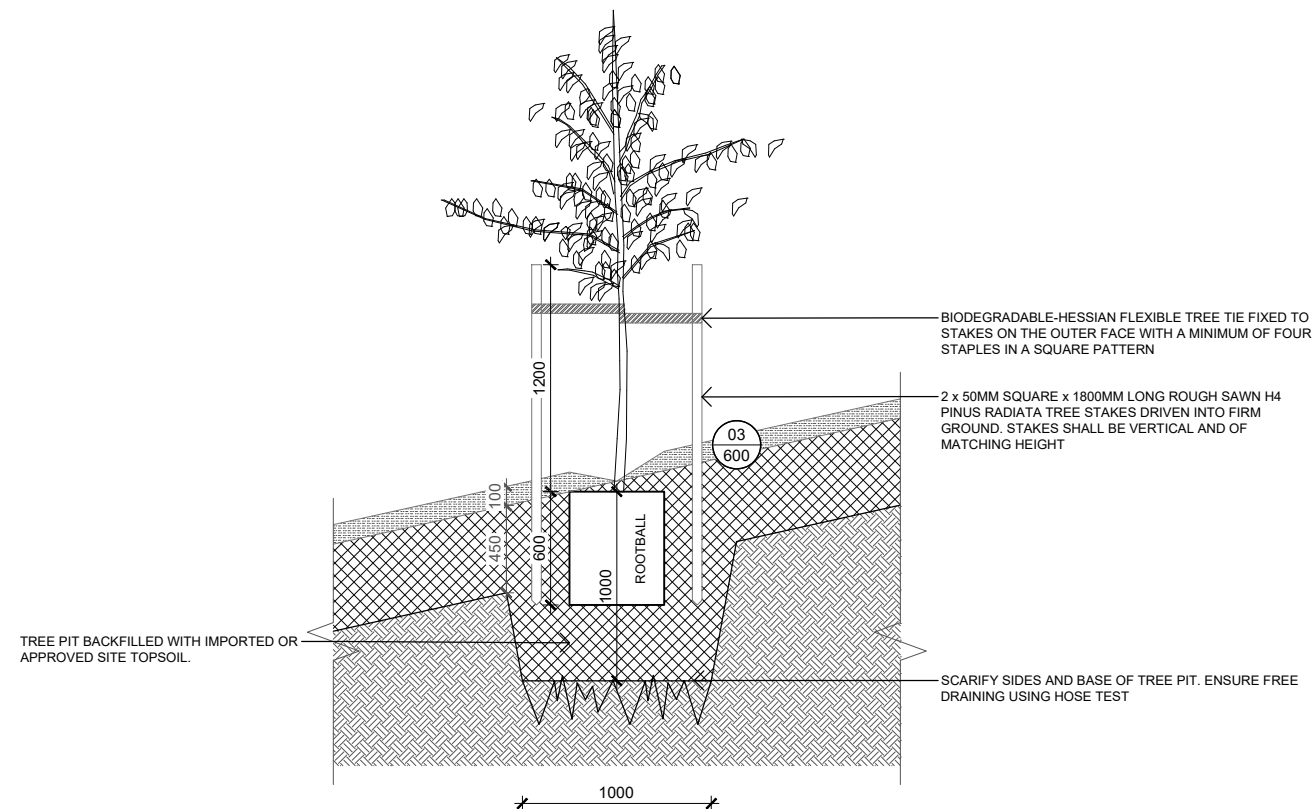
BM191029_520 **1**



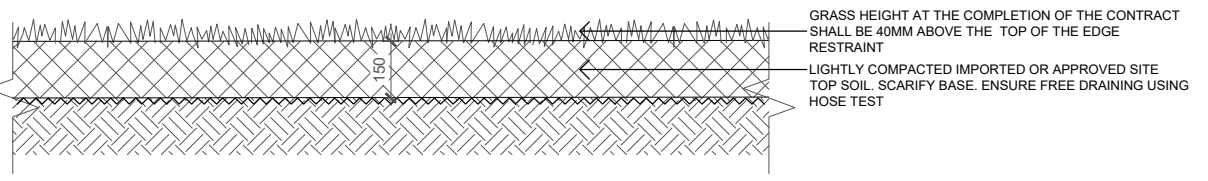
01 DETAIL T01 STREET TREE PIT
Scale: 1:20 @ A1 1:40 @ A3



03 DETAIL V01 PLANTING
Scale: 1:10 @ A1 1:20 @ A3



02 DETAIL T02 RESERVE TREE PIT
Scale: 1:20 @ A1 1:40 @ A3



04 DETAIL V02 GRASS
Scale: 1:10 @ A1 1:20 @ A3

NOTES

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CLIENT **Chedworth Properties**

CONSULTANTS
S&L Consultants
IBEX Lighting

AS BUILT

GREENHILL PARK AREAS KL&U

DETAILS
SHEET 01 OF 01

Design	ARo	Scale	Date
Drawn	ARo	As Shown	17.11.21
Check			
App'd			

DRAWING NO. REVISION

BM191029_600 **1**

APPENDIX 10

Asset Spreadsheets – Hard copy

- Water asset sheets
- Wastewater asset sheets
- Stormwater asset sheets



As Built Datasheet (to accompany As Built Plans) **Waikato Regional ITS**

WATER HYDRANTS

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16

Plan ID	Hydrant ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Hydrant Size (mm)	Physical Location (where necessary)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
30410-01-S16-W1	FH16.1	RM1	LOT 301	CHILMAN	TERRACE	150	BERM	447252.42	702668.39	N	Nov-21	\$1,212	
30410-01-S16-W1	FH16.2	RM4	LOT 8004	MUSSELWHITE	TERRACE	150	FOOTPATH	447133.31	702594.66	N	Nov-21	\$1,010	
30410-01-S16-W1	FH16.3	RM6	LOT 8011	MUSSELWHITE	TERRACE	150	BERM	447150.34	702533.86	N	Nov-21	\$1,010	
30410-01-S16-W1	FH16.4	RM2	LOT 460	EARP	CRESCENT	150	FOOTPATH	447216.44	702547.19	N	Nov-21	\$1,010	
30410-01-S16-W1	FH16.5	RM11	LOT 8117	COGAR	TERRACE	150	BERM	447293.29	702511.11	N	Nov-21	\$1,010	

As Built Datasheet (to accompany As Built Plans)**Waikato Regional ITS****WATER PIPELINES**

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online ContractorsPrepared by: S & LDevelopment/Subdivision/Job: Greenhill ParkDate: Mar-22Stage: Stage 16

Plan ID	Pipe ID	Pipe Diameter (mm)	Pipe Length (m)	Laying Depth (m)	Pipe Material	Joint Type	Service Status	Install Date	Asset Value	Comments
30410-01-S16-W1	RM1	150	86.4	1.2	PVC-M PN12	RRJ	N	Nov-21	\$2,269	
30410-01-S16-W1	RM2	150	219.7	1.2	PVC-M PN12	RRJ	N	Nov-21	\$5,769	
30410-01-S16-W1	RM3	150	63.5	1.2	PVC-M PN12	RRJ	N	Nov-21	\$1,668	
30410-01-S16-W1	RM4	150	166.9	1.2	PVC-M PN12	RRJ	N	Nov-21	\$4,383	
30410-01-S16-W1	RM5	150	22.6	1.2	PVC-M PN12	RRJ	N	Nov-21	\$593	
30410-01-S16-W1	RM6	150	27.3	1.2	PVC-M PN12	RRJ	N	Nov-21	\$717	
30410-01-S16-W1	RM7	150	52.9	1.2	PVC-M PN12	RRJ	N	Nov-21	\$1,389	
30410-01-S16-W1	RM8	150	32.0	1.2	PVC-M PN12	RRJ	N	Nov-21	\$840	
30410-01-S16-W1	RM9	150	44.1	1.2	PVC-M PN12	RRJ	N	Nov-21	\$1,158	
30410-01-S16-W1	RM10	150	46.4	1.2	PVC-M PN12	RRJ	N	Nov-21	\$1,218	
30410-01-S16-W1	RM11	150	16.1	1.2	PVC-M PN12	RRJ	N	Nov-21	\$423	
30410-01-S16-W1	RM12	63	19.5	1.2	PE80 SDR11 PN12.5	RRJ	N	Nov-21	\$305	
30410-01-S16-W1	RM13	63	28.8	1.2	PE80 SDR11 PN12.5	RRJ	N	Nov-21	\$451	
30410-01-S16-W1	RM14	63	167.8	1.2	PE80 SDR11 PN12.5	RRJ	N	Nov-21	\$2,626	
30410-01-S16-W1	RM15	63	29.5	1.2	PE80 SDR11 PN12.5	RRJ	N	Nov-21	\$462	
30410-01-S16-W1	RM16	63	12.2	1.2	PE80 SDR11 PN12.5	RRJ	N	Nov-21	\$191	

As Built Datasheet (to accompany As Built Plans)

Waikato Regional ITS

WATER CONNECTION/SERVICE LINE

Form Version 1 - July 2017

Developer/Contractor:

Chedworth Properties Ltd / Online Contractors

Prepared by:

S & L

Development/Subdivision/Job:

Greenhill Park

Date:

Mar-22

Stage:

Stage 16

Plan ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Meter Installed (Y/N)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-W1	RM4	LOT 450	MUSSELWHITE	TERRACE	BERM	25	1.9	MDPE	447177.92	702644.90	2.0LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 451	MUSSELWHITE	TERRACE	BERM	25	1.0	MDPE	447164.45	702639.81	2.6LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 452	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447149.78	702634.20	1.9LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 453	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447135.30	702628.80	1.4LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 454	MUSSELWHITE	TERRACE	BERM	25	2.4	MDPE	447126.34	702625.28	3.8LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 455	MUSSELWHITE	TERRACE	BERM	25	8.9	MDPE	447119.37	702622.62	3.7RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 456	MUSSELWHITE	TERRACE	BERM	25		MDPE				N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 457	EARP	CRESCENT	BERM	25	0.5	MDPE	447197.01	702595.75	2.8RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 458	EARP	CRESCENT	BERM	25	0.7	MDPE	447201.61	702583.33	1.0RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 459	EARP	CRESCENT	BERM	25	0.8	MDPE	447207.80	702567.52	3.0RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 460	EARP	CRESCENT	BERM	25	0.6	MDPE	447212.77	702554.15	2.3RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 461	EARP	CRESCENT	BERM	25	0.8	MDPE	447218.11	702540.18	2.2RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM2	LOT 462	EARP	CRESCENT	BERM	25	0.9	MDPE	447223.00	702527.05	1.2RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM9	LOT 463	COGAR	TERRACE	BERM	25	1.0	MDPE	447233.60	702489.17	3.0RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM9	LOT 464	COGAR	TERRACE	BERM	25	0.7	MDPE	447210.87	702480.42	1.6LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM9	LOT 465	COGAR	TERRACE	BERM	25	0.6	MDPE	447196.86	702475.28	3.7LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 466	MUSSELWHITE	TERRACE	BERM	25	0.7	MDPE	447178.97	702510.72	1.0LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 467	MUSSELWHITE	TERRACE	BERM	25	0.6	MDPE	447173.78	702524.27	1.4LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 468	MUSSELWHITE	TERRACE	BERM	25	0.4	MDPE	447168.90	702537.40	2.4LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 469	MUSSELWHITE	TERRACE	BERM	25	0.3	MDPE	447163.43	702551.81	2.0LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 470	MUSSELWHITE	TERRACE	BERM	25	0.4	MDPE	447158.05	702565.69	2.1LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 471	MUSSELWHITE	TERRACE	BERM	25	0.5	MDPE	447153.02	702579.22	2.7LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM7	LOT 472	MUSSELWHITE	TERRACE	BERM	25	0.9	MDPE	447161.31	702517.45	5.0RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM7	LOT 473	MUSSELWHITE	TERRACE	BERM	25	0.8	MDPE	447166.45	702504.03	2.4RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM7	LOT 474	MUSSELWHITE	TERRACE	BERM	25	0.8	MDPE	447171.07	702491.66	0.6RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM7	LOT 475	MUSSELWHITE	TERRACE	BERM	25	0.6	MDPE	447176.59	702477.43	0.9RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM15	LOT 476	MUSSELWHITE	TERRACE	BERM	25	0.3	MDPE	447181.02	702465.65	1.5RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM15	LOT 477	MUSSELWHITE	TERRACE	BERM	25	0.9	MDPE	447186.33	702451.46	2.6RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM11	LOT 478	MUSSELWHITE	TERRACE	BERM	25	0.7	MDPE	447198.07	702459.79	2.3LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM3	LOT 479	EARP	CRESCENT	BERM	25	0.7	MDPE	447241.79	702477.68	1.1RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM12	LOT 480	EARP	CRESCENT	BERM	25	0.7	MDPE	447253.24	702481.11	1.9LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8001	MUSSELWHITE	TERRACE	BERM	25	1.9	MDPE	447124.92	702613.77	2.3RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8002	MUSSELWHITE	TERRACE	BERM	25	1.3	MDPE	447127.07	702608.15	0.1RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8003	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447131.78	702595.72	0.6LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8004	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447132.55	702593.61	1.6RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8005	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447136.46	702583.37	2.4LB	N	N	Nov-21	\$293	

As Built Datasheet (to accompany As Built Plans)**Waikato Regional ITS****WATER CONNECTION/SERVICE LINE**

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Meter Installed (Y/N)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-W1	RM4	LOT 8006	MUSSELWHITE	TERRACE	BERM	25	1.1	MDPE	447137.74	702579.91	1.3RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8007	MUSSELWHITE	TERRACE	BERM	25	0.9	MDPE	447142.45	702567.55	0.5LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8008	MUSSELWHITE	TERRACE	BERM	25	1.0	MDPE	447143.35	702564.97	2.2RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8009	MUSSELWHITE	TERRACE	BERM	25	0.8	MDPE	447147.64	702553.76	-0.2LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8010	MUSSELWHITE	TERRACE	BERM	25	0.8	MDPE	447148.05	702552.57	1.5RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM4	LOT 8011	MUSSELWHITE	TERRACE	BERM	25		MDPE				N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8012	ACCESS LOT	N/A	BERM	25	0.8	MDPE	447156.67	702591.83	2.7RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8013	ACCESS LOT	N/A	BERM	25	0.8	MDPE	447163.78	702594.59	1.5RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8014	ACCESS LOT	N/A	BERM	25	0.9	MDPE	447167.71	702596.00	2.6LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8015	ACCESS LOT	N/A	BERM	25	0.9	MDPE	447174.21	702598.44	3.1LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8016	ACCESS LOT	N/A	BERM	25	0.6	MDPE	447180.72	702600.94	3.0RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM14	LOT 8017	ACCESS LOT	N/A	BERM	25	0.6	MDPE	447187.19	702603.30	3.9LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8018	COGAR	TERRACE	BERM	25	0.2	MDPE	447252.26	702496.12	3.9LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8019	COGAR	TERRACE	BERM	25	0.4	MDPE	447260.82	702499.36	2.7RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8020	COGAR	TERRACE	BERM	25	0.5	MDPE	447268.05	702502.04	0.8RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8021	COGAR	TERRACE	BERM	25	0.6	MDPE	447270.48	702503.05	1.8LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8022	COGAR	TERRACE	BERM	25	0.5	MDPE	447278.07	702505.80	1.7RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8023	COGAR	TERRACE	BERM	25	0.5	MDPE	447280.33	702506.75	0.7LB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8024	COGAR	TERRACE	BERM	25	0.3	MDPE	447288.38	702509.65	2.3RB	N	N	Nov-21	\$293	
30410-01-S16-W1	RM10	LOT 8117	COGAR	TERRACE	BERM	25	1.6	MDPE	447297.95	702513.40	1.7RB	N	N	Nov-21	\$293	

As Built Datasheet (to accompany As Built Plans) **Waikato Regional ITS**
Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors **Prepared by:** S & L
Development/Subdivision/Job: Greenhill Park **Date:** Mar-22
Stage: Stage 14

Plan ID	Valve ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Valve Size (mm)	Valve Manufacturer	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
30410-01-S16-W1	SV16.1	RM1	LOT 301	CHILMAN	TERRACE	150	HAWLE	447259.44	702649.34	N	Nov-21	\$960	
30410-01-S16-W1	SV16.2	RM1	LOT 301	CHILMAN	TERRACE	150	HAWLE	447265.16	702646.17	N	Nov-21	\$960	
30410-01-S16-W1	SV16.3	RM2	LOT 8017	MUSSELWHITE	TERRACE	150	HAWLE	447187.49	702623.85	N	Nov-21	\$960	
30410-01-S16-W1	SV16.4	RM4	LOT 8011	MUSSELWHITE	TERRACE	150	HAWLE	447153.97	702538.97	N	Nov-21	\$960	
30410-01-S16-W1	SV16.5	RM5	LOT 8011	WATKINS	STREET	150	HAWLE	447153.19	702534.96	N	Nov-21	\$960	
30410-01-S16-W1	SV16.6	RM5	LOT 472	MUSSELWHITE	TERRACE	150	HAWLE	447160.83	702521.41	N	Nov-21	\$960	
30410-01-S16-W1	SV16.7	RM7	LOT 475	MUSSELWHITE	TERRACE	150	HAWLE	447179.41	702471.91	N	Nov-21	\$960	
30410-01-S16-W1	SV16.8	RM8	LOT 465	COGAR	TERRACE	150	HAWLE	447193.28	702473.34	N	Nov-21	\$960	
30410-01-S16-W1	SV16.9	RM11	LOT 478	MUSSELWHITE	TERRACE	150	HAWLE	447196.85	702460.36	N	Nov-21	\$960	
30410-01-S16-W1	SV16.10	RM9	LOT 463	COGAR	TERRACE	150	HAWLE	447234.62	702488.43	N	Nov-21	\$960	
30410-01-S16-W1	SV16.11	RM2	LOT 463	EARP	CRESENT	150	HAWLE	447237.16	702492.03	N	Nov-21	\$960	
30410-01-S16-W1	SV16.12	RM10	LOT 8018	COGAR	TERRACE	150	HAWLE	447253.52	702495.89	N	Nov-21	\$960	
30410-01-S16-W1	PV16.1	RM14	LOT 8017	ACCESS LOT	N/A	63	HAWLE	447192.04	702604.68	N	Nov-21	\$505	
30410-01-S16-W1	PV16.2	RM13	LOT 472	WATKINS	STREET	63	HAWLE	447158.70	702523.35	N	Nov-21	\$505	
30410-01-S16-W1	PV16.3	RM14	LOT 465	MUSSELWHITE	TERRACE	63	HAWLE	447192.12	702474.36	N	Nov-21	\$505	
30410-01-S16-W1	PV16.4	RM12	LOT 480	COGAR	TERRACE	63	HAWLE	447252.78	702484.21	N	Nov-21	\$505	

As Built Datasheet (to accompany As Built Plans)												Waikato Regional ITS	
WASTEWATER MANHOLES												Form Version 1 - July 2017	
Developer/Contractor:		Chedworth Properties Ltd / Online Contractors			Prepared by:		S & L						
Development/Subdivision/Job:		Greenhill Park			Date:		Mar-22						
Stage:		Stage 16											
					(Centre)		(Centre)						
							(Centre)						
Plan ID	Manhole ID	Property ID (Lot No. or Address)	Street Name	Street Type	Lid Level (m)	Invert Level (m)	MH Width/Diam (mm)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
30410-01-S16-WW1	WWMH 1-14	N/A	N/A	N/A	38.788	34.40	1050	447420.084	702742.811	N	Sep-21	\$5,235.90	LOCATE INSIDE BALANCE LOT
30410-01-S16-WW1	WWMH 1-13	N/A	N/A	N/A	38.515	34.43	1050	447417.911	702739.291	N	Sep-21	\$5,235.90	LOCATE INSIDE BALANCE LOT
30410-01-S16-WW1	WWMH 1-12	N/A	N/A	N/A	38.242	35.06	1050	447323.408	702703.391	N	Sep-21	\$4,314.60	LOCATE INSIDE BALANCE LOT
30410-01-S16-WW1	WWMH 1-11	LOT 301	CHILMAN	TERRACE	37.98	35.63	1050	447240.102	702670.596	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-10	LOT 302	CHILMAN	TERRACE	38.152	35.85	1050	447251.763	702640.989	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-9	LOT 8017	EARP	CRESCENT	38.506	36.31	1050	447196.380	702620.002	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-8	LOT 459/460	EARP	CRESCENT	39.024	36.67	1050	447219.173	702559.519	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-7	LOT 8018	EARP	CRESCENT	41.354	37.15	1050	447245.681	702489.035	N	Sep-21	\$5,235.90	
30410-01-S16-WW1	WWMH 1-6	LOT 509	EARP	CRESCENT	40.992	37.55	1050	447265.176	702437.529	N	Sep-21		STG 17
30410-01-S16-WW1	WWMH 1-9-4	LOT 450	MUSSELWHITE	TERRACE	38.443	36.46	1050	447187.819	702642.599	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-9-3	LOT 454	MUSSELWHITE	TERRACE	38.467	36.91	1050	447129.716	702618.550	N	Sep-21	\$2,316.60	
30410-01-S16-WW1	WWMH 1-9-2	LOT 470	MUSSELWHITE	TERRACE	40.426	37.66	1050	447154.412	702558.109	N	Sep-21	\$4,314.60	
30410-01-S16-WW1	WWMH 1-9-1	LOT 478	MUSSELWHITE	TERRACE	42.972	41.69	1050	447192.159	702458.622	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-7B-1	LOT 464	COGAR	TERRACE	42.229	40.17	1050	447214.322	702477.369	N	Sep-21	\$2,666.77	
30410-01-S16-WW1	WWMH 1-7A-4	LOT 8117	COGAR	TERRACE	39.319	37.53	1050	447298.957	702509.127	N	Sep-21	\$2,666.77	

As Built Datasheet (to accompany As Built Plans) WASTEWATER PIPELINES **Waikato Regional ITS**
Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Joint Type	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-WW1	WWMH 1-14	WWMH 18.4	CARRS	ROAD			7.000	OPVC	RR			N	Sep-21	\$3,791.90	
30410-01-S16-WW1	WWMH 1-13	WWMH 1-14	CHILMAN	TER	ROADWAY	150	4.173	OPVC	RR	34.425	34.405	N	Sep-21	\$1,875.90	
30410-01-S16-WW1	WWMH 1-12	WWMH 1-13	CHILMAN	TER	ROADWAY	150	101.099	OPVC	RR	35.063	34.457	N	Sep-21	\$37,893.18	
30410-01-S16-WW1	WWMH 1-11	WWMH 1-12	CHILMAN	TER	ROADWAY	150	89.535	OPVC	RR	35.626	35.129	N	Sep-21	\$21,978.00	
30410-01-S16-WW1	WWMH 1-10	WWMH 1-11	EARP	CRES	ROADWAY	150	31.823	OPVC	RR	35.847	35.653	N	Sep-21	\$7,814.40	
30410-01-S16-WW1	WWMH 1-9	WWMH 1-10	EARP	CRES	ROADWAY	150	59.231	OPVC	RR	36.314	35.974	N	Sep-21	\$14,652.00	
30410-01-S16-WW1	WWMH 1-8	WWMH 1-9	EARP	CRES	ROADWAY	150	64.640	OPVC	RR	36.675	36.328	N	Sep-21	\$15,628.80	
30410-01-S16-WW1	WWMH 1-7	WWMH 1-8	EARP	CRES	ROADWAY	150	75.309	OPVC	RR	37.151	36.798	N	Sep-21	\$18,559.20	
30410-01-S16-WW1	WWMH 1-6	WWMH 1-7	EARP	CRES	ROADWAY	150	55.076	OPVC	RR	37.545	37.201	N	Sep-21	\$20,663.40	
30410-01-S16-WW1	WWMH 1-9-4	WWMH 1-9	EARP	CRES	BERM/ROAD	150	24.166	OPVC	RR	36.461	36.336	N	Sep-21	\$4,528.80	
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	EARP	CRES	BERM	150	61.238	OPVC	RR	36.905	36.549	N	Sep-21	\$11,510.70	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	MUSSELWHITE	TER	ROADWAY	150	67.190	OPVC	RR	37.658	36.985	N	Sep-21	\$12,642.90	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	MUSSELWHITE	TER	ROADWAY	150	106.415	OPVC	RR	41.687	37.777	N	Sep-21	\$21,245.40	
30410-01-S16-WW1	WWMH 1-7B-1	WWMH 1-7	COGAR	TER	ROADWAY	150	33.461	OPVC	RR	40.167	39.788	N	Sep-21	\$8,302.80	
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	COGAR	TER	ROADWAY	150	56.943	OPVC	RR	37.534	37.217	N	Sep-21	\$13,905.50	

As Built Datasheet (to accompany As Built Plans)

Waikato Regional ITS

WASTEWATER CONNECTION/SERVICE LINE

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments	
30410-01-S16-WW1	-	WWMH 1-9-4	LOT 450	MUSSELWHITE	TERRACE	BERM	100	7.3	uPVC SN16	1.2	447185.683	702649.58	2.6RB	1.2FB	N	Sep-21	\$599		
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 451	MUSSELWHITE	TERRACE	BERM	100	7.3	uPVC SN16	1.2	447162.108	702640.688	0.7LB	1.3FB	N	Sep-21	\$453		
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 452	MUSSELWHITE	TERRACE	BERM	100	8.3	uPVC SN16	1.2	447159.493	702639.828	2.1RB	1.4FB	N	Sep-21	\$274	4.07M + 4.27M	
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 453	MUSSELWHITE	TERRACE	BERM	100	7.9	uPVC SN16	1.2	447133.966	702630.627	0.8LB	1.8FB	N	Sep-21	\$453		
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 454	MUSSELWHITE	TERRACE	BERM	100	8.9	uPVC SN16	1.2	447131.028	702629.549	2.3RB	1.8FB	N	Sep-21	\$274	4.82M + 4.13M	
30410-01-S16-WW1	-	WWMH 1-9-3	LOT 455	MUSSELWHITE	TERRACE	BERM	100	19.0	uPVC SN16	1.2	447112.236	702621.789	1.4LB	1.2FB	N	Sep-21	\$298	4.75M + 14.27M	
30410-01-S16-WW1	-	WWMH 1-9-3	LOT 456	MUSSELWHITE	TERRACE	BERM	100	20.6	uPVC SN16	1.2	447110.054	702618.728	7.6LB	1.8FB	N	Sep-21	\$1,302		
30410-01-S16-WW1	WWMH 1-8	WWMH 1-9	LOT 457	EARP	CRES	BERM	100	9.7	uPVC SN16	1.2	447199.328	702584.574	0.9LB	1.3FB	N	Sep-21	\$580		
30410-01-S16-WW1	WWMH 1-8	WWMH 1-9	LOT 458	EARP	CRES	BERM	100	3.8	uPVC SN16	1.2	447200.192	702582.339	1.5RB	1.3FB	N	Sep-21	\$248		
30410-01-S16-WW1	WWMH 1-8	WWMH 1-9	LOT 459	EARP	CRES	BERM	100	10.5	uPVC SN16	1.2	447209.639	702556.982	1.5LB	1.4FB	N	Sep-21	\$269	4.23M + 6.17M	
30410-01-S16-WW1	WWMH 1-8	WWMH 1-9	LOT 460	EARP	CRES	BERM	100	9.9	uPVC SN16	1.2	447210.647	702554.446	1.2RB	1.4FB	N	Sep-21	\$737		
30410-01-S16-WW1	WWMH 1-7	WWMH 1-8	LOT 461	EARP	CRES	BERM	100	11.2	uPVC SN16	1.2	447219.68	702528.974	1.7LB	1.9FB	N	Sep-21	\$253	3.88M + 7.33M	
30410-01-S16-WW1	WWMH 1-7	WWMH 1-8	LOT 462	EARP	CRES	BERM	100	9.9	uPVC SN16	1.2	447221.041	702528.974	1.2FB	1.0RB	1.5FB	N	Sep-21	\$590	
30410-01-S16-WW1	WWMH 1-7	WWMH 1-8	LOT 463	EARP	CRES	BERM	100	10.5	uPVC SN16	1.2	447225.763	702512.273	1.0RB	2.2FB	N	Sep-21	\$622		
30410-01-S16-WW1	WWMH 1-7B-1	WWMH 21.2	LOT 464	COGAR	TERRACE	BERM	100	7.5	uPVC SN16	1.2	447209.22	702481.875	0.6LB	1.4FB	N	Sep-21	\$216	3.18M + 4.3M	
30410-01-S16-WW1	WWMH 1-7B-1	WWMH 21.2	LOT 465	COGAR	TERRACE	BERM	100	9.1	uPVC SN16	1.2	447205.749	702480.558	3.1RB	1.4FB	N	Sep-21	\$762		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 466	MUSSELWHITE	TERRACE	BERM	100	9.3	uPVC SN16	1.2	447182.116	702511.209	1.6LB	2.6FB	N	Sep-21	\$559		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 467	MUSSELWHITE	TERRACE	BERM	100	9.0	uPVC SN16	1.2	447175.761	702523.806	2.6LB	1.1FB	N	Sep-21	\$286	4.47M + 4.56M	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 468	MUSSELWHITE	TERRACE	BERM	100	8.2	uPVC SN16	1.2	447174.932	702526.97	0.7RB	1.5FB	N	Sep-21	\$501		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 469	MUSSELWHITE	TERRACE	BERM	100	10.1	uPVC SN16	1.2	447166.374	702552.534	2.4LB	2.5FB	N	Sep-21	\$317	5.09M + 5.02M	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 470	MUSSELWHITE	TERRACE	BERM	100	8.9	uPVC SN16	1.2	447164.849	702555.385	0.8RB	2.1FB	N	Sep-21	\$537		
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 471	MUSSELWHITE	TERRACE	BERM	100	8.4	uPVC SN16	1.2	447154.441	702581.67	0.9LB	1.7FB	N	Sep-21	\$511		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 472	MUSSELWHITE	TERRACE	BERM	100	9.5	uPVC SN16	1.2	447158.492	702520.708	1.0RB	1.0FB	N	Sep-21	\$569		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 473	MUSSELWHITE	TERRACE	BERM	100	10.6	uPVC SN16	1.2	447168.146	702492.078	0.8LB	2.1FB	N	Sep-21	\$627		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 474	MUSSELWHITE	TERRACE	BERM	100	11.3	uPVC SN16	1.2	447169.649	702489.214	2.4RB	1.7FB	N	Sep-21	\$285	4.48M + 6.86M	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 475	MUSSELWHITE	TERRACE	BERM	100	11.9	uPVC SN16	1.2	447176.983	702469.252	3.3LB	1.9FB	N	Sep-21	\$301	4.8M + 7.1M	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 476	MUSSELWHITE	TERRACE	BERM	100	10.5	uPVC SN16	1.2	447178.094	702465.951	0.2RB	2.0FB	N	Sep-21	\$621		
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 477	MUSSELWHITE	TERRACE	BERM	100	9.9	uPVC SN16	1.2	447184.294	702452.544	0.9RB	1.0FB	N	Sep-21	\$737		
30410-01-S16-WW1	WWMH 1-7B-1	WWMH 1-7	LOT 478	COGAR	TERRACE	BERM	100	9.4	uPVC SN16	1.2	447217.15	702468.384	2.7LB	1.1FB	N	Sep-21	\$710		
30410-01-S16-WW1	WWMH 1-6	WWMH 1-7	LOT 479	EARP	CRES	BERM	100	10.7	uPVC SN16	1.2	447244.614	702464.001	2.5LB	1.6FB	N	Sep-21	\$317	5.1M + 5.95M	
30410-01-S16-WW1	WWMH 1-6	WWMH 1-7	LOT 480	EARP	CRES	BERM	100	7.5	uPVC SN16	1.2	447259.642	702471.315	1.9RB	2.1FB	N	Sep-21	\$633	4.67M + 2.78M	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8001	MUSSELWHITE	TERRACE	BERM	100	10.0	uPVC SN16	1.2	447124.696	702608.134	0.7LB	1.7FB	N	Sep-21	\$400		
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8002	MUSSELWHITE	TERRACE	BERM	100	10.8	uPVC SN16	1.2	447125.579	702605.743	1.8LB	1.7FB	N	Sep-21	\$258	4.17M + 6.65M	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8003	MUSSELWHITE	TERRACE	BERM	100	11.0	uPVC SN16	1.2	447129.238	702596.749	2.5LB	1.5FB	N	Sep-21	\$301	4.83M + 6.15M	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8004	MUSSELWHITE	TERRACE	BERM	100	9.8	uPVC SN16	1.2	447130.485	702593.791	0.7RB	1.4FB	N	Sep-21	\$585		
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8005	MUSSELWHITE	TERRACE	BERM	100	10.3	uPVC SN16	1.2	447134.663	702581.154	1.0LB	1.9FB	N	Sep-21	\$611		
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8006	MUSSELWHITE	TERRACE	BERM	100	10.6	uPVC SN16	1.2	447136.631	702578.558	2.2RB	1.0FB	N	Sep-21	\$290	4.62M + 5.95M	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8007	MUSSELWHITE	TERRACE	BERM	100	11.2	uPVC SN16	1.2	447139.747	702568.572	2.4LB	1.6FB	N	Sep-21	\$311	4.95M + 6.28M	

As Built Datasheet (to accompany As Built Plans) **Waikato Regional ITS**
WASTEWATER CONNECTION/SERVICE LINE Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8008	MUSSELWHITE	TERRACE	BERM	100	10.1	uPVC SN16	1.2	447141.177	702565.001	1.4RB	1.5FB	N	Sep-21	\$601	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8009	MUSSELWHITE	TERRACE	BERM	100	11.4	uPVC SN16	1.2	447143.742	702553.948	1.3LB	3.1FB	N	Sep-21	\$816	
30410-01-S16-WW1	WWMH 1-9-2	WWMH 1-9-3	LOT 8010	MUSSELWHITE	TERRACE	BERM	100	13.0	uPVC SN16	1.2	447146.012	702549.715	3.5RB	2.4FB	N	Sep-21	\$396	6.64M + 6.32M
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 8011	MUSSELWHITE	TERRACE	BERM	100	10.2	uPVC SN16	1.2	447148.365	702545.346	1.4RB	1.8FB	N	Sep-21	\$606	
30410-01-S16-WW1	WWMH 1-9-1	WWMH 1-9-2	LOT 8012	MUSSELWHITE	TERRACE	BERM	100	11.2	uPVC SN16	1.2	447148.216	702616.467	1.9LB	1.4FB	N	Sep-21	\$327	5.3M + 5.86M
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 8013	MUSSELWHITE	TERRACE	BERM	100	10.1	uPVC SN16	1.2	447150.708	702617.724	0.9RB	1.1FB	N	Sep-21	\$606	
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 8014	MUSSELWHITE	TERRACE	BERM	100	10.1	uPVC SN16	1.2	447161.486	702621.864	0.5LB	1.0FB	N	Sep-21	\$601	
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 8015	MUSSELWHITE	TERRACE	BERM	100	10.6	uPVC SN16	1.2	447163.655	702622.796	1.8RB	0.9FB	N	Sep-21	\$269	4.2M + 6.36M
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 8016	MUSSELWHITE	TERRACE	BERM	100	10.3	uPVC SN16	1.2	447173.334	702626.149	0.9LB	1.2FB	N	Sep-21	\$611	
30410-01-S16-WW1	WWMH 1-9-3	WWMH 1-9-4	LOT 8017	MUSSELWHITE	TERRACE	BERM	100	11.1	uPVC SN16	1.2	447176.129	702627.334	2.1RB	1.1FB	N	Sep-21	\$285	4.47M + 6.66M
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8018	COGAR	TERRACE	BERM	100	6.3	uPVC SN16	1.2	447256.36	702499.838	0.9RB	1.5FB	N	Sep-21	\$400	
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8019	COGAR	TERRACE	BERM	100	7.2	uPVC SN16	1.2	447259.144	702500.627	2.0LB	1.3FB	N	Sep-21	\$258	4.01M + 3.23M
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8020	COGAR	TERRACE	BERM	100	7.5	uPVC SN16	1.2	447267.07	702504.333	0.9RB	1.9FB	N	Sep-21	\$506	2.42M + 2.66 + 2.42M
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8021	COGAR	TERRACE	BERM	100	4.7	uPVC SN16	1.2	447272.12	702506.373	1.3RB	2.1FB	N	Sep-21	\$295	
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8022	COGAR	TERRACE	BERM	100	6.3	uPVC SN16	1.2	447276.412	702507.363	2.7RB	1.5FB	N	Sep-21	\$400	
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8023	COGAR	TERRACE	BERM	100	6.7	uPVC SN16	1.2	447282.326	702510.023	2.0RB	1.8FB	N	Sep-21	\$422	
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8024	COGAR	TERRACE	BERM	100	7.6	uPVC SN16	1.2	447285.175	702510.56	1.3LB	2.0FB	N	Sep-21	\$295	5.28M + 2.31M
30410-01-S16-WW1	WWMH 1-7A-4	WWMH 1-7	LOT 8117	COGAR	TERRACE	BERM	100	6.5	uPVC SN16	1.2	447296.514	702515.198	2.4RB	1.7FB	N	Sep-21	\$557	

As Built Datasheet (to accompany As Built Plans) **Waikato Regional ITS**
STORMWATER MANHOLES **Form Version 1 - July 2017**

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16
 (Centre) (Centre) (Centre)

Plan ID	Manhole ID	Property ID (Lot No. or Address)	Street Name	Street Type	Lid Level (m)	Invert Level (m)	MH Width/Diam (mm)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	SWMH A3	LOT 450	MUSSELWHITE	TERRACE	38.23	35.74	1050	447183.65	702638.84	N	Nov-20	\$2,120.10	
30410-01-S16-SW1	SWMH A2	LOT 454	MUSSELWHITE	TERRACE	38.47	36.33	1050	447130.55	702620.92	N	Nov-20	\$2,120.10	
30410-01-S16-SW1	SWMH A1	LOT 456	N/A	N/A	TBC	TBC	1050	447098.52	702607.15	N	Nov-20	\$2,120.10	Located in Carrs Park
30410-01-S16-SW1	SWMH A2-3	LOT 8005	MUSSELWHITE	TERRACE	39.38	37.47	1050	447141.67	702585.82	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH A2-2	LOT 468	MUSSELWHITE	TERRACE	41.48	39.17	1050	447161.86	702532.07	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH A2-1	LOT 474	MUSSELWHITE	TERRACE	42.65	41.07	1050	447179.83	702484.59	N	Jun-21	\$1,942.50	
30410-01-S16-SW1	SWMH B5	N/A	N/A	N/A	38.50	TBC	1050	447235.18	702549.80	N	Jun-21	\$1,942.50	Located in Balance Lot - Future Lot 302
30410-01-S16-SW1	SWMH B4	LOT 460	EARP	CRESCENT	39.19	35.94	1050	447222.23	702545.15	N	Jun-21	\$4,118.10	
30410-01-S16-SW1	SWMH B3	LOT 462	EARP	CRESCENT	40.25	36.81	1050	447232.48	702517.52	N	Jun-21	\$4,118.10	
30410-01-S16-SW1	SWMH B2	LOT 463	EARP	CRESCENT	41.35	38.68	1050	447244.53	702486.29	N	Jun-21	\$4,118.10	
30410-01-S16-SW1	SWMH B1	LOT 478	COGAR	TERRACE	43.01	41.29	1050	447195.27	702467.65	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH B3-1	N/A	N/A	N/A	39.34	37.75	1050	447280.57	702535.34	N	Jun-21	\$1,942.50	Located in Balance Lot - Future Lot 303
30410-01-S16-SW1	SWMH B4-1	LOT 457	EARP	CRESCENT	38.62	36.93	1050	447201.76	702599.65	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH D7	N/A	N/A	N/A	38.64	35.46	1050	447277.12	702565.73	N	Jun-21	\$4,118.10	Located in Balance Lot - Future Lot 302
30410-01-S16-SW1	SWMH D6	N/A	N/A	N/A	38.70	35.64	1050	447289.05	702569.74	N	Jun-21	\$4,118.10	Located in Balance Lot - Future Road
30410-01-S16-SW1	SWMH D6-6	N/A	N/A	N/A	38.27	35.77	1050	447275.12	702602.29	N	Jun-21	\$2,120.10	Located in Balance Lot - Future Road
30410-01-S16-SW1	SWMH D6-5	N/A	N/A	N/A	38.25	35.83	1050	447259.67	702633.79	N	Jun-21	\$2,120.10	Located in Balance Lot - Future Road
30410-01-S16-SW1	SWMH D6-4	LOT 301	CHILMAN	TERRACE	38.00	36.11	1050	447244.65	702665.06	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH D6-3	LOT 301	CHILMAN	TERRACE	38.10	36.18	1050	447246.26	702671.86	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH D6-4-1	LOT 301	CHILMAN	TERRACE	37.80	36.41	1050	447230.27	702695.24	N	Jun-21	\$2,120.10	
30410-01-S16-SW1	SWMH E1	N/A	N/A	N/A	37.56	TBC	1050	447233.65	702618.66	N	Jun-21	\$2,963.70	

As Built Datasheet (to accompany As Built Plans)
STORMWATER PIPELINES
Waikato Regional ITS
 Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Joint Type	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	SWMH A3	SWOUT A4	MUSSELWHITE	TERRACE	ROADWAY / RESERVE	525	19.7	RC	RR	35.736	34.914	N	Nov-21	\$2,815	
30410-01-S16-SW1	SWMH A2	SWMH A3	MUSSELWHITE	TERRACE	ROADWAY	525	57.6	RC	RR	36.327	35.826	N	Nov-21	\$8,225	
30410-01-S16-SW1	SWMH A1	SWMH A2	N/A	N/A	PRIVATE PROPERTY	450	33.2	RC	RR			N	Nov-21	\$4,452	Located (mostly) in Lot 811 & Lot 456
													Nov-21		
30410-01-S16-SW1	SWMH A2-3	SWMH A2	MUSSELWHITE	TERRACE	ROADWAY	375	34.8	RC	RR	37.472	36.411	N	Nov-21	\$6,354.50	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	MUSSELWHITE	TERRACE	ROADWAY	375	57.4	RC	RR	39.172	37.549	N	Nov-21	\$10,481	
30410-01-S16-SW1	SWMH A2-1	SWMH A2-2	MUSSELWHITE	TERRACE	ROADWAY	300	50.8	uPVC	SN16	41.074	39.317	N	Nov-21	\$8,606	
30410-01-S16-SW1	SWMH B5	SWOUT B6	EARP	CRESCENT	ROADWAY / PRIVATE PROPERTY	450	6.5	RC	RR	35.399	35.210	N	Nov-21	\$872	
30410-01-S16-SW1	SWMH B4	SWMH B5	EARP	CRESCENT	BERM	450	13.7	RC	RR	35.938	35.764	N	Nov-21	\$1,877.40	
30410-01-S16-SW1	SWMH B3	SWMH B4	EARP	CRESCENT	ROADWAY	375	29.5	RC	RR	36.805	36.222	N	Nov-21	\$3,624.00	
30410-01-S16-SW1	SWMH B2	SWMH B3	EARP	CRESCENT	ROADWAY	300	33.5	uPVC	SN16	38.677	37.481	N	Nov-21	\$3,986.40	
30410-01-S16-SW1	SWMH B1	SWMH B2	COGAR	TERRACE	ROADWAY	225	52.7	uPVC	SN16	41.291	39.167	N	Nov-21	\$6,281.60	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	N/A	N/A	PRIVATE PROPERTY	300	51.3	uPVC	SN16	37.746	37.307	N	Nov-21	\$6,160.80	Loacted in Balance Lot - Future Lot 303
30410-01-S16-SW1	SWMH B4-1	SWMH B4	EARP	CRESCENT	ROADWAY	300	58.2	uPVC	SN16	36.932	36.379	N	Nov-21	\$7,006.40	
30410-01-S16-SW1	SWMH D7	SWOUT D8	N/A	N/A	PRIVATE PROPERTY	450	17.1	RC	RR	35.435	35.200	N	Nov-21	\$2,411.64	
30410-01-S16-SW1	SWMH D6	SWMH D7	N/A	N/A	PRIVATE PROPERTY	375	12.6	RC	RR	35.639	35.557	N	Nov-21	\$1,473.78	
30410-01-S16-SW1	SWMH D6-6	SWMH D6	N/A	N/A	PRIVATE PROPERTY	375	34.4	RC	RR	35.772	35.678	N	Nov-21	\$4,689.30	
30410-01-S16-SW1	SWMH D6-5	SWMH D6-6	N/A	N/A	PRIVATE PROPERTY	375	35.1	RC	RR	35.833	35.776	N	Nov-21	\$4,689.30	
30410-01-S16-SW1	SWMH D6-4	SWMH D6-5	CHILMAN	TERRACE	ROADWAY	375	34.7	RC	RR	36.112	35.923	N	Nov-21	\$4,689.30	
30410-01-S16-SW1	SWMH D6-3	SWMH D6-4	CHILMAN	TERRACE	ROADWAY	375	7.0	RC	RR	36.190	36.175	N	Nov-21	\$937.86	
30410-01-S16-SW1	SWMH D6-4-1	SWMH D6-4	CHILMAN	TERRACE	ROADWAY	375	33.4	RC	RR	36.414	36.190	N	Nov-21	\$4,689.30	
30410-01-S16-SW1	SWMH E1	SWOUT E2	EARP	CRESCENT	ROADWAY	525	27.7	RC	RR	35.135	34.906	N	Nov-21	\$4,426.80	

As Built Datasheet (to accompany As Built Plans)
STORMWATER CONNECTION/SERVICE LINE

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	-	SWMH A3	LOT 450	MUSSELWHITE	TERRACE	BERM	100/150	10.3	uPVC SN16	1.2	447176.78	702645.60	1.2LB	0.7FB	N	Nov-21	\$263	PIPE SIZE: 3.8m = 100mm; 6.5m = 150mm
30410-01-S16-SW1	-	SWMH A3	LOT 451	MUSSELWHITE	TERRACE	BERM	100/150	11.8	uPVC SN16	1.2	447174.40	702645.26	1.2RB	1.2FB	N	Nov-21	\$1,227	PIPE SIZE: 5.3m = 100mm; 6.5m = 150mm
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 452	MUSSELWHITE	TERRACE	BERM	100/150	9.2	uPVC SN16	1.2	447148.07	702635.23	0.6LB	0.9FB	N	Nov-21	\$1,028	PIPE SIZE: 3.8m = 100mm; 5.4m = 150mm
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 453	MUSSELWHITE	TERRACE	BERM	100	4.6	uPVC SN16	1.2	447145.54	702634.18	2.1RB	1.0FB	N	Nov-21	\$263	
30410-01-S16-SW1	-	SWMH A2	LOT 454	MUSSELWHITE	TERRACE	BERM	100/150	11.3	uPVC SN16	1.2	447123.77	702626.69	1.9LB	1.7FB	N	Nov-21	\$311	PIPE SIZE: 4.7m = 100mm; 6.6m = 150mm
30410-01-S16-SW1	-	SWMH A2	LOT 455	MUSSELWHITE	TERRACE	BERM	100	10.8	uPVC SN16	1.2	447120.55	702624.28	2.0LB	0.6FB	N	Nov-21	\$1,196	PIPE SIZE: 4.2m = 100mm; 6.6m = 150mm
30410-01-S16-SW1	SWMH A1	SWMH A2	LOT 456	MUSSELWHITE	TERRACE	BERM	100	2.6	uPVC SN16	1.2	447111.89	702614.79	3.3LB	1.4FB	N	Nov-21	\$199	
30410-01-S16-SW1	-	SWMH B4-1	LOT 457	EARP	CRESCENT	BERM	100	7.8	uPVC SN16	1.2	447194.40	702597.10	0.6RB	1.5FB	N	Nov-21	\$475	
30410-01-S16-SW1	SWMH B4-1	SWMH B4	LOT 458	EARP	CRESCENT	BERM	100	7.1	uPVC SN16	1.2	447204.38	702571.68	2.1LB	1.2FB	N	Nov-21	\$300	PIPE SIZE: 4.5m = 100mm; 4.1m = 150mm
30410-01-S16-SW1	SWMH B4-1	SWMH B4	LOT 459	EARP	CRESCENT	BERM	100/150	3.9	uPVC SN16	1.2	447204.95	702568.56	1.0RB	1.7FB	N	Nov-21	\$902	
30410-01-S16-SW1	-	SWMH B4	LOT 460	EARP	CRESCENT	BERM	100	4.9	uPVC SN16	1.2	447214.67	702543.29	1.9LB	1.6FB	N	Nov-21	\$321	
30410-01-S16-SW1	-	SWMH B4	LOT 461	EARP	CRESCENT	BERM	100/150	8.3	uPVC SN16	1.2	447215.77	702540.08	1.5RB	1.7FB	N	Nov-21	\$933	PIPE SIZE: 4.9m = 100mm; 3.4m = 150mm
30410-01-S16-SW1	SWMH B3	SWMH B4	LOT 462	EARP	CRESCENT	BERM	150	7.3	uPVC SN16	1.2	447221.80	702525.43	2.3RB	1.2FB	N	Nov-21	\$448	
30410-01-S16-SW1	-	-	LOT 463	EARP	CRESCENT	BERM	150	8.1	uPVC SN16	1.2	447226.90	702511.62	2.1RB	1.3FB	N	Nov-21	\$491	
30410-01-S16-SW1	SWMH B1	SWMH B2	LOT 464	COGAR	TERRACE	BERM	150	8.3	uPVC SN16	1.2	447218.94	702485.42	1.0RB	1.3FB	N	Nov-21	\$501	
30410-01-S16-SW1	SWMH B1	SWMH B2	LOT 465	COGAR	TERRACE	BERM	150	8.3	uPVC SN16	1.2	447207.36	702481.03	1.4RB	1.2FB	N	Nov-21	\$496	
30410-01-S16-SW1	SWMH A2-1	SWMH A2-2	LOT 466	MUSSELWHITE	TERRACE	BERM	100/150	11.4	uPVC SN16	1.2	447181.03	702510.28	2.1LB	1.3FB	N	Nov-21	\$289	PIPE SIZE: 4.3m = 100mm; 7.1m = 150mm
30410-01-S16-SW1	SWMH A2-1	SWMH A2-2	LOT 467	MUSSELWHITE	TERRACE	BERM	100	3.4	uPVC SN16	1.2	447180.22	702513.23	1.0RB	1.6FB	N	Nov-21	\$1,164	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 468	MUSSELWHITE	TERRACE	BERM	100	11.5	uPVC SN16	1.2	447170.60	702538.50	2.0LB	1.5FB	N	Nov-21	\$385	PIPE SIZE: 6.1m = 100mm; 5.4m = 150mm
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 469	MUSSELWHITE	TERRACE	BERM	100/150	5.2	uPVC SN16	1.2	447169.67	702541.41	1.1RB	1.7FB	N	Nov-21	\$1,175	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 470	MUSSELWHITE	TERRACE	BERM	100	6.9	uPVC SN16	1.2	447160.55	702565.87	2.8LB	1.8FB	N	Nov-21	\$427	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 471	MUSSELWHITE	TERRACE	BERM	100	10.6	uPVC SN16	1.2	447158.88	702570.17	1.8RB	1.7FB	N	Nov-21	\$1,175	PIPE SIZE: 5.1m = 100mm; 5.5m = 150mm
30410-01-S16-SW1	SWMH A2-1	SWMH A2-2	LOT 472	MUSSELWHITE	TERRACE	BERM	100/150	7.7	uPVC SN16	1.2	447163.44	702505.87	0.5LB	1.5FB	N	Nov-21	\$870	PIPE SIZE: 3.6m = 100mm; 4.1m = 150mm
30410-01-S16-SW1	SWMH A2-1	SWMH A2-2	LOT 473	MUSSELWHITE	TERRACE	BERM	100	4.2	uPVC SN16	1.2	447164.48	702503.79	2.0RB	1.4FB	N	Nov-21	\$284	
30410-01-S16-SW1	-	SWMH A2-1	LOT 474	MUSSELWHITE	TERRACE	BERM	100/150	9.1	uPVC SN16	1.2	447174.25	702477.98	0.4LB	1.4FB	N	Nov-21	\$226	PIPE SIZE: 3.1m = 100mm; 6.0m = 150mm
30410-01-S16-SW1	-	SWMH A2-1	LOT 475	MUSSELWHITE	TERRACE	BERM	100	3.7	uPVC SN16	1.2	447175.34	702476.03	1.8RB	1.0FB	N	Nov-21	\$1,080	
30410-01-S16-SW1	-	SWMH B1	LOT 476	MUSSELWHITE	TERRACE	BERM	100/150	18.5	uPVC SN16	1.2	447182.64	702454.12	1.1LB	2.0FB	N	Nov-21	\$279	PIPE SIZE: 4.1m = 100mm; 14.4m = 150mm
30410-01-S16-SW1	-	SWMH B1	LOT 477	MUSSELWHITE	TERRACE	BERM	100	4.1	uPVC SN16	1.2	447184.45	702451.42	2.0RB	1.2FB	N	Nov-21	\$2,109	
30410-01-S16-SW1	SWMH B1	SWMH B2	LOT 478	COGAR	TERRACE	BERM	150	7.1	uPVC SN16	1.2	447218.59	702468.83	1.2LB	1.1FB	N	Nov-21	\$438	
30410-01-S16-SW1	-	SWMH B2	LOT 479	COGAR	TERRACE	BERM	150	12.4	uPVC SN16	1.2	447241.59	702474.22	4.2RB	0.8FB	N	Nov-21	\$719	
30410-01-S16-SW1	-	SWMH B2	LOT 480	COGAR	TERRACE	BERM	150	12.1	uPVC SN16	1.2	447255.67	702481.68	2.2LB	2.0FB	N	Nov-21	\$703	
30410-01-S16-SW1	SWMH A1	SWMH A2	LOT 8001	MUSSELWHITE	TERRACE	BERM	150	2.6	uPVC SN16	1.2	447123.44	702613.47	2.0RB	1.0FB	N	Nov-21	\$199	
30410-01-S16-SW1	SWMH A2-3	SWMH A2	LOT 8002	MUSSELWHITE	TERRACE	BERM	100/150	8.9	uPVC SN16	1.2	447126.88	702603.41	2.5LB	1.3FB	N	Nov-21	\$284	PIPE SIZE: 4.2m = 100mm; 4.7m = 150mm
30410-01-S16-SW1	SWMH A2-3	SWMH A2	LOT 8003	MUSSELWHITE	TERRACE	BERM	100	3.3	uPVC SN16	1.2	447127.90	702600.52	0.5RB	1.4FB	N	Nov-21	\$902	
30410-01-S16-SW1	SWMH A2-3	SWMH A2	LOT 8004	MUSSELWHITE	TERRACE	BERM	100/150	7.9	uPVC SN16	1.2	447132.09	702588.96	1.2LB	1.6FB	N	Nov-21	\$891	PIPE SIZE: 3.8m = 100mm; 4.1m = 150mm
30410-01-S16-SW1	SWMH A2-3	SWMH A2	LOT 8005	MUSSELWHITE	TERRACE	BERM	100	5.7	uPVC SN16	1.2	447133.46	702585.23	2.8RB	1.6FB	N	Nov-21	\$364	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8006	MUSSELWHITE	TERRACE	BERM	100	9.0	uPVC SN16	1.2	447137.04	702574.96	2.3LB	1.9FB	N	Nov-21	\$321	PIPE SIZE: 4.9m = 100mm; 4.1m = 150mm
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8007	MUSSELWHITE	TERRACE	BERM	100	4.8	uPVC SN16	1.2	447137.52	702571.76	0.8RB	2.6FB	N	Nov-21	\$996	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8008	MUSSELWHITE	TERRACE	BERM	100/150	7.6	uPVC SN16	1.2	447142.92	702561.34	1.7LB	1.4FB	N	Nov-21	\$860	PIPE SIZE: 3.6m = 100mm; 4.0m = 150mm
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8009	MUSSELWHITE	TERRACE	BERM	100	5.2	uPVC SN16	1.2	447144.31	702557.71	2.4RB	1.2FB	N	Nov-21	\$337	
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8010	MUSSELWHITE	TERRACE	BERM	100/150	8.3	uPVC SN16	1.2	447147.29	702547.10	0.6LB	2.2FB	N	Nov-21	\$944	PIPE SIZE: 3.9m = 100mm; 4.4m = 150mm

As Built Datasheet (to accompany As Built Plans) **Waikato Regional ITS**
STORMWATER CONNECTION/SERVICE LINE Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	SWMH A2-2	SWMH A2-3	LOT 8011	MUSSELWHITE	TERRACE	BERM	100	4.7	uPVC SN16	1.2	447149.15	702544.15	2.8RB	1.5FB	N	Nov-21	\$311	
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8012	MUSSELWHITE	TERRACE	BERM	150	8.4	uPVC SN16	1.2	447148.61	702616.67	1.4LB	1.3FB	N	Nov-21	\$507	
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8013	MUSSELWHITE	TERRACE	BERM	100/150	8.9	uPVC SN16	1.2	447154.40	702619.25	1.6LB	1.0FB	N	Nov-21	\$284	PIPE SIZE: 4.2m = 100mm; 4.7m = 150mm
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8014	MUSSELWHITE	TERRACE	BERM	150	4.3	uPVC SN16	1.2	447157.47	702619.36	1.3RB	2.0FB	N	Nov-21	\$1,017	
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8015	MUSSELWHITE	TERRACE	BERM	100/150	9.4	uPVC SN16	1.2	447166.48	702623.45	1.8LB	1.3FB	N	Nov-21	\$332	PIPE SIZE: 5.1m = 100mm; 4.3m = 150mm
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8016	MUSSELWHITE	TERRACE	BERM	100	4.6	uPVC SN16	1.2	447169.53	702624.07	1.3RB	1.8FB	N	Nov-21	\$996	
30410-01-S16-SW1	SWMH A2	SWMH A3	LOT 8017	MUSSELWHITE	TERRACE	BERM	150	9.9	uPVC SN16	1.2	447182.15	702629.01	1.7LB	1.7FB	N	Nov-21	\$586	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8018	COGAR	TERRACE	BERM	150	2.2	uPVC SN16	1.2	447241.12	702518.34	1.3LB	0.8BB	N	Nov-21	\$178	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8019	COGAR	TERRACE	BERM	150	3.2	uPVC SN16	1.2	447251.51	702521.21	2.1LB	1.8BB	N	Nov-21	\$178	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8020	COGAR	TERRACE	BERM	150	2.9	uPVC SN16	1.2	447256.97	702523.53	2.2LB	1.5BB	N	Nov-21	\$215	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8021	COGAR	TERRACE	BERM	150	3.4	uPVC SN16	1.2	447263.57	702525.39	2.6RB	2.1BB	N	Nov-21	\$242	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8022	COGAR	TERRACE	BERM	150	2.2	uPVC SN16	1.2	447269.90	702529.07	1.1RB	0.9BB	N	Nov-21	\$178	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8023	COGAR	TERRACE	BERM	150	2.1	uPVC SN16	1.2	447281.95	702533.06	0.9BB	2.6RB	N	Nov-21	\$178	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8024	COGAR	TERRACE	BERM	150	2.7	uPVC SN16	1.2	447283.02	702534.78	0.05RB	1.4BB	N	Nov-21	\$205	
30410-01-S16-SW1	SWMH B3-1	SWMH B3	LOT 8117	COGAR	TERRACE	BERM	150	2.5	uPVC SN16	1.2	447283.03	702534.78	1.6LB	0.2BB	N	Nov-21	\$194	

As Built Datasheet (to accompany As Built Plans)**Waikato Regional ITS****STORMWATER CATCHPITS**

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors Prepared by: S & L
 Development/Subdivision/Job: Greenhill Park Date: Mar-22
 Stage: Stage 16

Plan ID	Catchpit ID	Property ID (Lot No. or Address)	Street Name	Street Type	Catchpit Type	Grate Level (m)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	CP A2	8012	MUSSELWHITE	TER	SINGLE SUMP	38.40	447136.17	702611.03	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP A2-1	465	MUSSELWHITE	TER	SINGLE SUMP	42.55	447183.55	702485.98	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP A2-3	471	MUSSELWHITE	TER	SINGLE SUMP	39.54	447147.82	702580.24	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP A2-2A	467	MUSSELWHITE	TER	SINGLE SUMP	41.28	447169.37	702523.16	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP A2-2B	472	WATKINS	ROAD	SINGLE SUMP	41.23	447153.24	702525.42	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP B2	479	MUSSELWHITE	TER	SINGLE SUMP	41.29	447235.23	702481.86	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP B4	460	EARP	CRES	SINGLE SUMP	39.07	447224.47	702550.24	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP B4-1	8017	EARP	CRES	SINGLE SUMP	38.27	447201.81	702610.13	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-3	8073	CHILMAN	TER	SINGLE SUMP	37.96	447253.21	702673.27	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-4-1A	SWALE 1	CHILMAN	TER	SINGLE SUMP	37.55	447220.76	702704.17	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-4-1B	SWALE 1	CHILMAN	TER	SINGLE SUMP	37.62	447231.99	702710.77	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-4A	8073	CHILMAN	TER	SINGLE SUMP	37.93	447246.69	702664.67	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-4B	SWALE 1	CHILMAN	TER	SINGLE SUMP	37.94	447241.08	702661.60	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-5A	8081	CHILMAN	TER	SINGLE SUMP	38.18	447261.56	702633.73	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-5B	8081	CHILMAN	TER	SINGLE SUMP	38.20	447255.75	702631.09	N	Nov-21	\$879.00	
30410-01-S16-SW1	CP D6-5C	457	EARP	CRES	SINGLE SUMP	38.08	447243.13	702634.26	N	Nov-21	\$879.00	
30410-01-S16-SW1	DCP A3	8017	MUSSELWHITE	TER	DOUBLE SUMP	37.99	447173.67	702632.93	N	Nov-21	\$1,107.80	
30410-01-S16-SW1	ROWCP B4-1	8017	ROW	DRIVEWAY	SINGLE SUMP	38.78	447191.41	702601.97	N	Nov-21	\$879.00	

As Built Datasheet (to accompany As Built Plans)**Waikato Regional ITS****STORMWATER CATCHPIT LEADS**

Form Version 1 - July 2017

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Catchpit ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Catchpit Lead Pipe Diam (mm)	Catchpit Lead Pipe Length (m)	Catchpit Lead Pipe Material	Invert Level at Dwnstrm end	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	CP A2	SWMH A2	454	MUSSELWHITE	TER	BERM	225	9.9	uPVC SN17	37.147	N	Nov-21	\$1,069.20	
30410-01-S16-SW1	CP A2-1	SWMH A2-1	465	MUSSELWHITE	TER	ROADWAY	225	3.9	uPVC SN17	41.265	N	Nov-21	\$421.20	
30410-01-S16-SW1	CP A2-3	SWMH A2-3	8005	MUSSELWHITE	TER	ROADWAY	225	8.3	uPVC SN17	38.058	N	Nov-21	\$896.40	
30410-01-S16-SW1	CP A2-2A	SWMH A2-2	468	MUSSELWHITE	TER	ROADWAY	225	11.7	uPVC SN17	39.972	N	Nov-21	\$1,263.60	
30410-01-S16-SW1	CP A2-2B	SWMH A2-2	472	WATKINS	ROAD	ROADWAY	225	10.9	uPVC SN17	39.660	N	Nov-21	\$1,177.20	
30410-01-S16-SW1	CP B2	SWMH B2	479	MUSSELWHITE	TER	ROADWAY	225	10.3	uPVC SN17	39.981	N	Nov-21	\$1,112.40	
30410-01-S16-SW1	CP B4	SWMH B4	460	EARP	CRES	ROADWAY	225	5.6	uPVC SN17	37.542	N	Nov-21	\$604.80	
30410-01-S16-SW1	CP B4-1	SWMH B4-1	457	EARP	CRES	ROADWAY	225	10.5	uPVC SN17	36.379	N	Nov-21	\$1,134.00	
30410-01-S16-SW1	CP D6-3	SWMH D6-3	8073	CHILMAN	TER	ROADWAY	225	7.1	uPVC SN17	36.968	N	Nov-21	\$766.80	
30410-01-S16-SW1	CP D6-4-1A	SWMH D6-4-1	301	CHILMAN	TER	ROADWAY	225	13	uPVC SN17	36.444	N	Nov-21	\$1,404.00	
30410-01-S16-SW1	CP D6-4-1B	SWMH D6-4-1	300	CHILMAN	TER	ROADWAY	225	15.6	uPVC SN17	36.460	N	Nov-21	\$1,684.80	
30410-01-S16-SW1	CP D6-4A	SWMH D6-4	8073	CHILMAN	TER	ROADWAY	225	2.1	uPVC SN17	36.798	N	Nov-21	\$226.80	
30410-01-S16-SW1	CP D6-4B	SWMH D6-4	301	CHILMAN	TER	ROADWAY	225	5	uPVC SN17	36.818	N	Nov-21	\$540.00	
30410-01-S16-SW1	CP D6-5A	SWMH D6-5	8081	CHILMAN	TER	ROADWAY	225	1.9	uPVC SN17	37.030	N	Nov-21	\$205.20	
30410-01-S16-SW1	CP D6-5B	SWMH D6-5	8081	CHILMAN	TER	ROADWAY	225	4.8	uPVC SN17	37.031	N	Nov-21	\$518.40	
30410-01-S16-SW1	CP D6-5C	SWMH D6-5	8081	CHILMAN	TER	ROADWAY	225	16.5	uPVC SN17	37.046	N	Nov-21	\$1,782.00	
30410-01-S16-SW1	DCP A3	SWMH A3	450	MUSSELWHITE	TER	ROADWAY	300	11.6	uPVC SN17	36.744	N	Nov-21	\$1,252.80	
30410-01-S16-SW1	ROWCP B4-1	SWMH B4-1	8017	ROW		DRIVEWAY	225	10.6	uPVC SN17	37.130	N	Nov-21	\$1,144.80	

As Built Datasheet (to accompany As Built Plans)

Developer/Contractor: Chedworth Properties Ltd / Online Contractors
 Development/Subdivision/Job: Greenhill Park
 Stage: Stage 16

Prepared by: S & L
 Date: Mar-22

Plan ID	Dwnstr Asset ID	Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Easting Coordinate Inlet	Northing Coordinate Inlet	Easting Coordinate Outlet	Northing Coordinate Outlet	Service Status	Install Date	Asset Value	Comments
30410-01-S16-SW1	CP A2	MUSSELWHITE	TER	ROADWAY	100	56.2	NOVA	38.78	37.66	447148.15	702580.71	447136.17	702611.03	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	31.5	NOVA	38.78	37.66	447148.15	702580.71	447136.17	702611.03	N	Nov-21		
30410-01-S16-SW1	CP A2-1	MUSSELWHITE	TER	ROADWAY	100	17.1	NOVA	42.40	41.80	447189.89	702470.18	447183.55	702485.98	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	19.9	NOVA	42.51	41.80	447183.92	702469.50	447183.55	702485.98	N	Nov-21		
30410-01-S16-SW1	CP A2-3	MUSSELWHITE	TER	ROADWAY	100	44.7	NOVA	40.49	38.78	447163.93	702538.87	447147.82	702580.24	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	48.4	NOVA	40.63	38.78	447159.71	702533.66	447147.82	702580.24	N	Nov-21		
30410-01-S16-SW1	CP A2-2A	MUSSELWHITE	TER	ROADWAY	100	16.4	NOVA	40.05	40.53	447163.93	702538.87	447169.37	702523.16	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	39.9	NOVA	41.52	40.53	447183.85	702486.13	447169.37	702523.16	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	47.1	NOVA	42.07	40.53	447179.04	702482.54	447169.37	702523.16	N	Nov-21		
30410-01-S16-SW1	CP A2-2B	WATKINS	STREET	ROADWAY	100	42.7	NOVA	40.95	40.48	447115.96	702517.33	447153.24	702525.42	N	Nov-21		
		WATKINS	STREET	ROADWAY	100	36.4	NOVA	40.75	40.48	447119.89	702509.22	447153.24	702525.42	N	Nov-21		
		WATKINS	STREET	ROADWAY	100	17.5	NOVA	40.02	40.48	447164.45	702520.91	447153.24	702525.42	N	Nov-21		
		WATKINS	STREET	ROADWAY	100	6.5	NOVA	40.64	40.48	447156.45	702532.44	447153.24	702525.42	N	Nov-21		
30410-01-S16-SW1	CP B2	COCAR	TER	ROADWAY	100	46.6	NOVA	42.40	40.54	447191.81	702465.05	447235.23	702481.86	N	Nov-21		
		COCAR	TER	ROADWAY	100	51.2	NOVA	42.39	40.54	447189.89	702470.18	447235.23	702481.86	N	Nov-21		
		COCAR	TER	ROADWAY	100	5.2	NOVA	40.60	40.54	447240.33	702483.28	447235.23	702481.86	N	Nov-21		
		COCAR	TER	ROADWAY	100	9.7	NOVA	40.73	40.54	447241.58	702489.74	447235.23	702481.86	N	Nov-21		
30410-01-S16-SW1	CP B4	EARP	CRES	ROADWAY	100	62.7	NOVA	40.55	38.30	447247.06	702491.80	447224.47	702550.24	N	Nov-21		
		EARP	CRES	ROADWAY	100	68.2	NOVA	40.74	38.30	447241.58	702489.74	447224.47	702550.24	N	Nov-21		
30410-01-S16-SW1	CP B4-1	EARP	CRES	ROADWAY	100	7.5	NOVA	37.70	37.52	447199.60	702617.27	447201.81	702610.13	N	Nov-21		
		EARP	CRES	ROADWAY	100	64.0	NOVA	39.30	37.52	447224.91	702550.45	447201.81	702610.13	N	Nov-21		
		EARP	CRES	ROADWAY	100	16.0	NOVA	37.72	37.52	447193.09	702618.01	447201.81	702610.13	N	Nov-21		
		EARP	CRES	ROADWAY	100	64.6	NOVA	38.42	37.52	447219.54	702548.06	447201.81	702610.13	N	Nov-21		
30410-01-S16-SW1	CP D6-3	CHILMAN	TER	ROADWAY	100	0.8	NOVA	37.20	37.21	447254.13	702673.19	447253.21	702673.27	N	Nov-21		
30410-01-S16-SW1	CP D6-4-1A	CHILMAN	TER	ROADWAY	100	49.5	NOVA	37.19	36.80	447240.70	702661.47	447220.76	702704.17	N	Nov-21		
30410-01-S16-SW1	CP D6-4-1B	CHILMAN	TER	ROADWAY	100	47.6	NOVA	37.25	35.87	447251.86	702678.74	447231.99	702710.77	N	Nov-21		
30410-01-S16-SW1	CP D6-4A	CHILMAN	TER	ROADWAY	100	11.9	NOVA	37.21	37.18	447253.41	702672.88	447246.69	702664.67	N	Nov-21		
		CHILMAN	TER	ROADWAY	100	34.1	NOVA	37.40	37.18	447261.91	702634.14	447246.69	702664.67	N	Nov-21		
30410-01-S16-SW1	CP D6-4B	CHILMAN	TER	ROADWAY	100	19.9	NOVA	37.42	37.19	447247.38	702643.29	447241.08	702661.60	N	Nov-21		
30410-01-S16-SW1	CP D6-5A	CHILMAN	TER	ROADWAY	100	24.0	NOVA	37.60	37.42	447272.25	702612.52	447261.56	702633.73	N	Nov-21		
30410-01-S16-SW1	CP D6-5B	CHILMAN	TER	ROADWAY	100	23.5	NOVA	37.61	37.45	447265.81	702609.32	447255.75	702631.09	N	Nov-21		
		CHILMAN	TER	ROADWAY	100	7.2	NOVA	37.49	37.45	447251.26	702635.90	447255.75	702631.09	N	Nov-21		
30410-01-S16-SW1	CP D6-5C	EARP	CRES	ROADWAY	100	8.2	NOVA	37.49	37.33	447251.26	702635.90	447243.13	702634.26	N	Nov-21		
		EARP	CRES	ROADWAY	100	46.8	NOVA	37.67	37.33	447199.60	702617.27	447243.13	702634.26	N	Nov-21		
		EARP	CRES	ROADWAY	100	52.3	NOVA	37.85	37.33	447197.61	702622.73	447243.13	702634.26	N	Nov-21		
		EARP	CRES	ROADWAY	100	7.7	NOVA	37.48	37.33	447247.40	702643.26	447243.13	702634.26	N	Nov-21		
30410-01-S16-SW1	DCP A3	MUSSELWHITE	TER	ROADWAY	100	31.1	NOVA	37.72	37.26	447193.09	702618.01	447173.67	702632.93	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	46.2	NOVA	37.65	37.26	447137.03	702610.13	447173.67	702632.93	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	52.3	NOVA	37.62	37.26	447130.97	702617.51	447173.67	702632.93	N	Nov-21		
		MUSSELWHITE	TER	ROADWAY	100	37.1	NOVA	37.49	37.26	447171.30	702637.94	447173.67	702632.93	N	Nov-21		
30410-01-S16-SW1	ROWCP B4-1	ROW	DRIVE	DRIVEWAY	NA	NA	NA	NA	NA	NA	NA	447191.41	702601.97	N	Nov-21		